

FLIGHT

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AIRCRAFT ENGINEER
AND AIRSHIPS

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EDITORIAL COMMENT



WE have to offer our profound sympathy to our two competitors in the coming Schneider contest, Italy and France, on tragic crashes which have cost each of those countries the life of one of her Schneider pilots. On Thursday, July 31, M. Bougault, one of the French pilots in training at Etang de Berre, crashed into the lake while on a trial flight and was killed. It is said that the propeller of his machine broke in the air. Bougault and Guilbaud were famous as the first two airmen to fly from Paris to Madagascar.

Schneider Tragedies and Prospects
On Sunday, August 3, Capt. Giovanni Monti, of the Italian Schneider team, crashed with his seaplane into waters of Lake Garda and was killed. This catastrophe comes home to us with especial poignancy, for we had an opportunity of seeing and knowing Capt. (then Lieutenant) Monti at Calshot during the last Schneider contest in 1929. He was the first string of the Italian team, a position to which he succeeded owing to the fatal crash of Capt. Motta at Lake Garda a few days before he was due to start for England. Monti was a splendid and most daring pilot. The delivery of the new Macchi seaplanes had been made very shortly before the date of the contest. Motta was understood to have gained some experience of the type, but he was killed on the first machine of the type. The two others were brought to Calshot before either of them had been flown, and it is doubtful if either Monti or Cadringer had been up in the type on Lake Garda. Certainly they had neither of them had much experience of the type. It is a fact that one of those two Macchis took off for the first time in the actual seaworthiness test at Calshot the day before the speed race. To attempt to make a race in two practically untested machines was a desperate feat of daring; yet that was what Monti and Cadringer did. In the race they took off and began to fly round the course. Before long a water pipe burst in Monti's machine and scalded the pilot rather badly. He successfully landed his heavily laden seaplane off Seaview, and was taken

DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

1931

- July 25-Aug. 9. Rhon Gliding Competitions, Germany.
- Aug. 12. Flying Meeting at Cowes Aerodrome
- Aug. 15. Scarborough Ae.C. Air Pageant.
- Aug. 15. Manchester-Liverpool Inter-City Race.
- Aug. 22. Northants. Flying Party at Horsey Toll.
- Aug. 22. Newcastle-on-Tyne Air Pageant, Cramlington
- Aug. 29. Flying Meeting at Yarmouth.
- Aug. 29-Sept. 5. Boulogne Air Week.
- Aug. 29-Sept. 7. U.S. National Air Races, Cleveland, Ohio.
- Sept. 5. Norfolk and Norwich Ae.C. Display at Yarmouth.
- Sept. 5. Haldon Flying Meeting.
- Sept. 12. Schneider Trophy Contest.
- Sept. 19. All-Women's Aviation Meeting at Northamptonshire Ae.C., Sywell
- Sept. 23-Oct. 11. French Two-Seater Light Plane Competition.
- Sept. 26. Garden Party, Bristol and Wessex Ae.C.

off by motor boats. Cadringer was almost suffocated by fumes from his engine, and he, too, had to land. The pluck of both these pilots roused the greatest admiration in every British sportsman. We should have liked nothing better than to have welcomed Monti again and to have seen him fly a machine with which he had become familiar. He would have given our men a great race, and if he had carried off the trophy to Italy, there would have been no one to whom we should more cheerfully have surrendered it. It is, indeed, tragic to think that of the six pilots who flew in the contest of 1929, three, Dal Molin, Monti and the winner Waghorn, have all been killed in flying accidents. It marks the price which has to be paid for advance in aeronautical science. The loss of these lives is deeply regretted, but the lives have not been wasted.

Turning to more cheerful subjects, it is a great satisfaction to know that both the French and the Italian teams are coming to Calshot to take part in the race. A triangular contest will be much more interesting than one between only two nations. A French Schneider team has not been seen in British waters since 1923, when it suffered very bad luck. Of the three machines, one was damaged while being brought up from the shed to the starting line, another had engine trouble and could not start, while the only machine which could, and did, cross the line suffered from some mechanical defect which brought it down near Selsey Bill. Since that year France has not made an appearance in any Schneider contest, and this was very much to be regretted, as in the preceding years her pilots had accumulated most of the world's air records. In 1929 she decided to take up high-speed flying once more. A team was formally entered for the Schneider that year, but it was withdrawn shortly before the date of the race. High-speed work needs continuous effort and practice. It cannot be taken up one year and dropped the next and so on—at least if results are to be expected. Now France has had two years in which to develop and train a team. Even that, we admit, is not the same thing as actual experience of racing. Still, the designers and the pilots have had time to get into training, and we hope to see France make a gallant show when September 12 dawns.

The race this year will be quite different from those of recent years, in that the seaworthiness tests and the speed test will be flown on the same day. We understand that there will, in fact, be no interval between them. A machine will take off, make its two landings, and then go straight off across the starting line. This will mean that pilots will have to accomplish a feat which, we believe, has never been attempted before, namely, to land the seaplanes with petrol on board which will be more than enough for the race round the pylons. In practice in 1929 some of our pilots made landings with considerable loads of petrol on board, but never with the full weight. Monti cannot have used up a very large percentage of his load when he made his forced landing. This time, during the seaworthiness tests, the machines will have to carry more than enough

for the race, and will have to make two landings before crossing the line. It will call for the greatest piloting skill to do this without damage to the machines.

There was a time when we were inclined to hope that some other country would carry off the trophy before Great Britain had held it for three years, and so prevent the series of contests from coming to an end. That was when it was obvious that preparation for a Schneider contest was having a most beneficial effect upon our high-speed design. Who, in 1923, could have foreseen that by 1931 a Royal Air Force squadron would be able to fly at 200 m.p.h.? If, as then was certain, the Schneider was a good thing for Great Britain and for the flying of the world in general, it would have been false patriotism to hope that three successive British victories should put an end to all Schneider contests.

Since then we have had reason to change our opinion to some degree. There is something to be said for the view which the leader of the Italian team expressed in 1929, namely, that though the Schneider had become the greatest speed contest in the world, it was not, by its conditions, suited to fulfil that rôle. Our own Government a few months ago expressed somewhat similar opinions. We take leave to doubt whether it held those opinions very sincerely, and was not merely seeking an excuse to avoid the extra expense of defending the trophy. Still, if those opinions can be put forward by authorities of two nations, it really does seem time that the series of Schneider contests should come to an end. Then, perhaps, another contest may be started with conditions which are suited to modern conditions of high-speed flying. In any case, we should certainly prefer to see Great Britain win the trophy outright rather than surrender it by default to some other nation.

Thanks to the generosity and patriotism of Lady Houston, we are able to defend the trophy this year. We are spared the humiliation of handing it over to Italy without making an effort to defend it. If we lose it this year, we shall lose after a contest in which we feel sure that we shall put up a fight worthy of our national reputation. But we hope that Great Britain will not lose. Though our seaplanes and our engines are not totally novel designs, as most competitors in the Schneider have been for some years past, they are the embodiment of our latest knowledge after two years' experience of those types. A type developed in a reasonably leisurely sort of way, tried out and tested, is a type in which a considerable amount of confidence may be felt. As evidence of this we may mention the fine performance put up in the last race by the machines flown by D'Arcy Greig and Dal Molin. Both of these machines had flown in the race of 1927, and they proved themselves, as they were intended to do, sound machines which could be trusted to get round the course. That they were not so fast as the new types is true, but that argument is no reason for distrusting the Supermarine Rolls-Royce S.6 type which we are using in the contest next month. So we say, may the best machine win, and may a British machine be the best!

Air Aide-de-Camp to the King

THE Air Ministry announces the appointment of Group Captain John Eustace Arthur Baldwin, D.S.O., O.B.E., as Air Aide-de-Camp to the King (*vice* Group Captain Lionel

Wilmot Brabazon Rees, V.C., O.B.E., M.C., A.F.C., who vacates the appointment on retirement from the Royal Air Force). Group Captain Baldwin is Commandant of the Central Flying School, Wittering.



ON "INSTRUMENT FLYING"

THERE can be no quibbling over the fact that a very large number of the cases wherein aircraft pilots find themselves in difficulties are caused by having to fly through cloud or other thick weather, so that the horizon is obscured and the pilot's senses thereby blanketed to such an extent that he cannot trust them, with the consequence that all too often the machine gradually becomes, to him, unmanageable. This is caused solely by pilots being taught to rely primarily upon their senses and to use their instruments only as a means of checking the senses, with the result that, almost invariably, when the senses and the instruments clash, then the pilot mistrusts the latter and relies on the former.

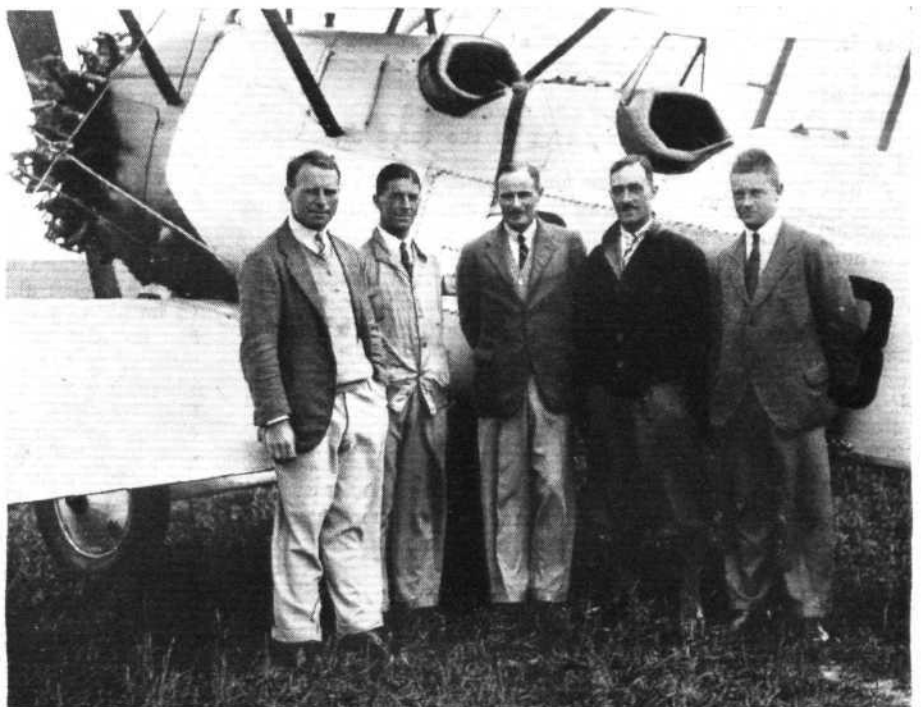
We ourselves feel that those who rely primarily on their senses cannot avoid, sooner or later, finding themselves in difficulty if they do very much flying in this country, as even in summer one is very liable to run into thick weather on a cross-country journey of any length.

To make flying by instruments safe, however, two things are necessary; the first is an adequate set of the right type of instruments, and the second a training in the use of these instruments. As a matter of fact, flying by the senses and by instruments are to a certain extent antagonistic, particularly when there is no horizon for the pilot to use as his datum, and, when flying blind, that is, relying solely on one's instruments, it is necessary to disregard the evidence of one's senses. For example, it is a peculiar fact that, when completely enveloped in cloud, the pilot may think that he has his right wing down or is side-slipping to the right, whereas, in matter of fact, he is making a skidding turn to the left, and it can easily be seen that, when correcting for this condition, what he thinks he is doing will only aggravate what he is actually doing, and quite probably eventually result in a spin.

So far, few flying schools have made any real effort to teach their pupils how to fly safely under such conditions, and it is only latterly that the need for this has been recognised. Amongst those who have instituted a blind-flying course designed to make pilots confident when flying entirely blind, is Air Service Training, Ltd., at Hamble. Flt. Lt. H. F. Jenkins, who is in charge of instruction there, has, together with the experts at the

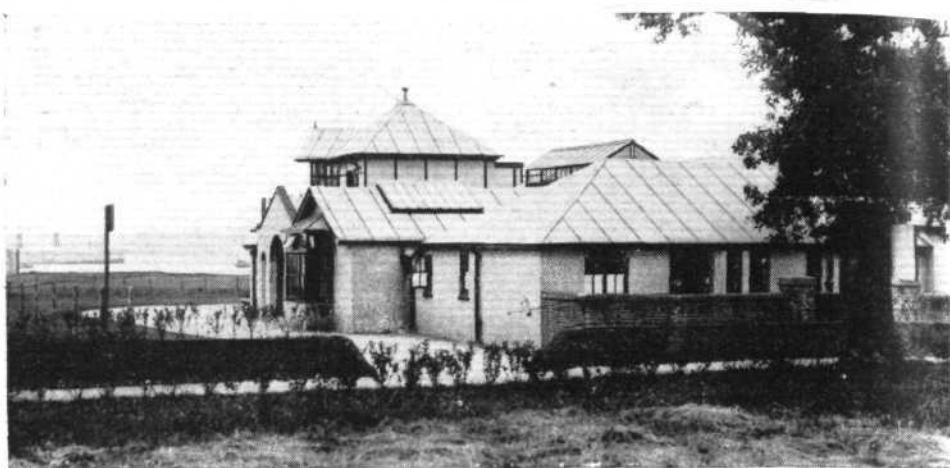
Central Flying School, Wittering, gone into the subject very deeply, with the result that A.S.T. can claim to have evolved a technique of training which should result in producing pilots capable of flying safely under any conditions. Let us emphasise, however, at the very start that although pilots may, by this course, be taught to feel themselves capable of piloting an aircraft safely through cloud they are very definitely discouraged from taking off an aerodrome which is buried in low cloud, for the obvious reason that if they were allowed to do so then collisions would sooner or later occur at that aerodrome. Their ability to fly blind is therefore only used as a safeguard which will enable them to arrive at their destination safely when they encounter foggy conditions during their journey while knowing that conditions are good and clear beyond.

A.S.T. have equipped several of their Avro Tutors with a hood over the rear cockpit made of canvas, which lets through sufficient light for the instrument board to be read, thereby producing conditions similar to actually flying in cloud or fog. After considerable experiments they have decided to standardise the Reid and Sigrist Turn Indicator together with the Liquid Pitch Indicator. These two are really the only extra instruments installed for the purpose. Naturally the pilot has to use them in conjunction with the other usual flying instruments such as the A.S.I., altimeter, compass and engine instruments. We ourselves were privileged recently to make a short trial of this equipment and feel that, provided as we have said before, the evidence of one's senses was disregarded, the training of pilots to fly safely entirely by instruments should present no very great difficulties, and the ability to do so should ensure that no pilot would suffer from a sense of panic when entirely enveloped in cloud.



The Flying Instructional Staff at Hamble consists entirely of experienced ex-R.A.F. instructors. (Left to right) Flt.-Lt. R. P. P. Pope, F./O. M. C. Dudding, Grp.-Capt. R. J. F. Barton (Commandant of the School), Flt.-Lt. H. F. Jenkins (Chief Instructor), F./O. R. C. Berlyn. (FLIGHT Photo.)

The old Avro Mess Room which has now been refurbished and made into the head office and club house for A.S.T. (FLIGHT Photo.)



In connection with the A.S.T. course, it is interesting to note that Mr. Oscar Garden, who has been doing a course of blind flying, has now completed his course, and in the final tests he was able to take off with accuracy, climb and glide the machine at correct angles, do accurate turns, spin, and recover with ease, correct the machine from awkward positions with promptitude, and he flew around a course of approximately 70 miles, with the start and finishing point at Hamble, finally concluding the flight precisely over the aerodrome—all of this completely blinded by the hood. This is a typical example of what can be done with proper training.

Including his flight to Australia, Mr. Garden had done 500 hours' flying, but had never had any instruction in flying entirely by instruments before this course.

Flt.-Lt. Jenkins has, together with other acknowledged experts, very kindly compiled the following short treatise on Blind Flying, which describes clearly its aims and objects.

BLIND FLYING—SOME CONCLUSIONS

TO grasp fully what is meant by "Blind Flying," it is first necessary to understand a little of the complex action of the human system which enables a man to fly in the ordinary way.

The controls of an aeroplane are worked by the muscles of the hands and feet, and every movement of the plane is controlled by these muscles. They must, however, receive their orders through the agency of the nerve paths from the brain of the pilot, and the brain must in turn use its perceptive members for its information.

Flying by Eye

The major part of the information relied upon by the brain is that obtained by the eyes, although a little—such as the whistling of the wires in a dive—is obtained through the ears, and, again, some is obtained by the feel on the seat, etc.

It is, however, definitely established that without the eyes it is impossible to fly for any length of time. The eyes rely on horizons or datum points so that they may convey to the brain the amount of movement, if any, from a datum plane or point in either of the three dimensions of flying.

A bad horizon, as in misty weather, will cause a greater strain on the pilot, because it is more difficult for the eyes to locate the information required.

When the eyes are unable to pick up a datum point or horizon, a condition is reached which is termed blind flying. When flying through clouds, etc., it is often possible to pick up a patch slightly darker than the rest, and immediately the eyes function again, but when there is a complete absence of any information, such as in thick fogs, clouds, and especially clouds at night, then the pilot can quickly lose all control until the eyes can function normally. The difficulty is, that when the clouds are very close to the ground it is too late to regain control of the machine.

In these days of advanced aviation, when structural and engine failures are very rare occurrences, the safety of flying almost entirely depends upon the skill, judgment and airmanship of pilots, and the record of accidents directly or indirectly attributable to pilots being unexpectedly caught in circumstances of bad visibility is, regrettably, a long one.

Bad Visibility and Accidents

Many inexperienced pilots have been sorely tried by the lack of a clear horizon, particularly when manoeuvring

near the ground, and so get into difficulties when there is insufficient height for recovery. Taking off in conditions of bad visibility has also claimed its quota of accidents. Encountering fog when making a cross-country flight or being compelled to climb into cloud to avoid high ground has also resulted in crashes. In fact, so high is the proportion of accidents in which the basic cause is inability on the part of the pilot to orientate himself, that this failure can be regarded as one of the principal flying risks.

How Blind Flying has Developed

With a view to reducing these risks, experiments in flying by instruments were carried out in this country as far back as 1917 and 1918. At that time, however, suitable instruments were not available, but even so, constructive results were achieved and pilots were taught to fly with reasonable accuracy for short periods in clouds. Shortly after the Great War, the development of Blind Flying was continued in France, and later, considerable experiments have been made possible in America by Mr. Daniel Guggenheim, who inaugurated a fund for this purpose. It is only recently, however, that the necessity for pilots to be trained to fly by instruments has received recognition in this country and a system of training is now established at the Central Flying School, the premier training unit in the Royal Air Force.

As a result of the developments at the Central Flying School, the definite conclusion has been reached that practically the whole of the risks arising from conditions of bad visibility can be overcome by the training of pilots in the technique of Blind Flying, and the reliability of instruments specially designed for the purpose has played an important part in making this training practicable.

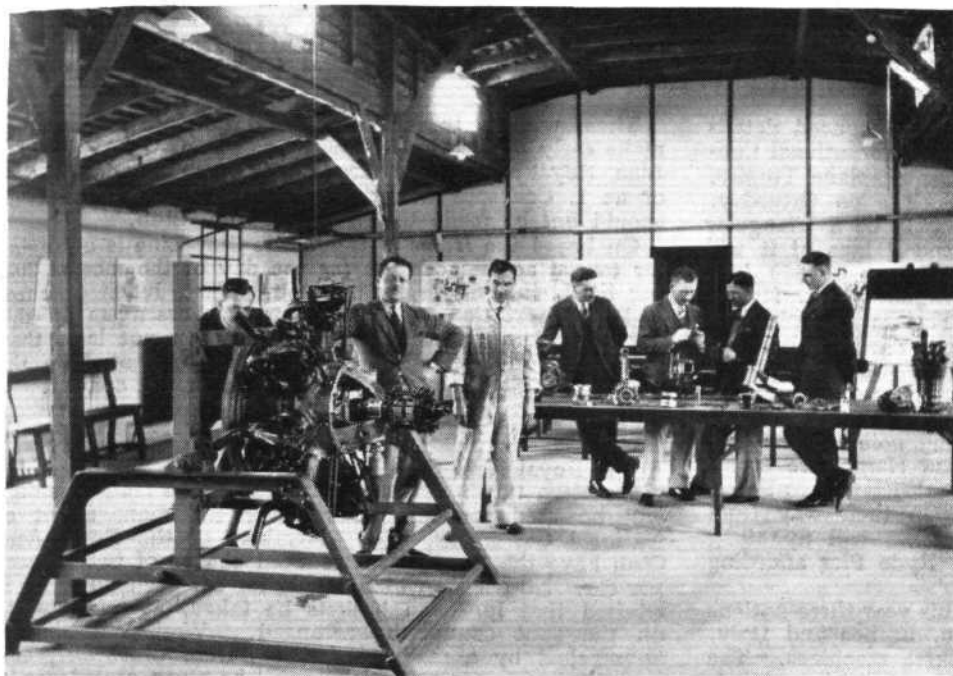
Instrument Flying is More Accurate

In addition to the primary object of a training in Blind Flying, i.e. to enhance security in bad visibility, instrument flying also provided for more accurate flying in more ordinary circumstances than is afforded by its counterpart, "sensory flying" and allows of greater precision for specific purposes such as dead straight runs of short duration for wind finding, vertical photography, or experimental purposes.

The average pilot who has not approached the subject with an open and analytical mind will nearly always claim to be able to fly blind if need be, yet if called upon to do so, usually provides some good excuse. It is probably quite true that the average pilot can fly reasonably safely through a cloud-bank for a very short period of, say, ten minutes, but tests at the Central Flying School of about eighty keen pilots with flying experience ranging from 300 to 2,000 hours showed that *not one* of them could fly blind safely for more than twelve minutes, even when provided with adequate instruments, without specific training in the use of these instruments. The reason for this is only apparent when the question of training for Blind Flying is examined. Certain conclusions are then arrived at unmistakably which throw a light on this very important subject.

Firstly, the process of flying blind is at first unpleasant to such a degree that firm instruction on psychologically sound lines is essential. No pilot can fly merely by his senses without reference to some external datum.

Secondly, instruments do not give a really natural reaction, and their use to replace the normal external datum



The lecture rooms are all well-fitted out as this view of the engine lecture room shows. Sectioned engines are used as well as drawings.

is always, therefore, a matter of effect rather than of instinct.

Thirdly, the senses are not only inadequate for flying blind, but are definitely misleading.

Without elaborating on these conclusions, it is necessary to emphasise the last. Nearly all pilots who have tried to fly in a cloud, particularly if they have endeavoured to manoeuvre under these conditions, can admit to peculiar and erratic results. They obey their senses, notably that of deep muscle or "seat" feel, and the aeroplane, unfortunately, does not behave as it should. The result is that most pilots come out of a cloud in a steep, nose-down spiral, and frequently in a spin. The reason for this is always the same, and actually amounts to the fact that the pilot is unable to distinguish sensorily between a yaw one way and wing-down the other.

Assessing Errors in Control

These shortcomings can, however, be met by proper training in the use of carefully selected instruments. Curiously enough, it is found that nearly every error committed in Blind Flying is due to the misuse of the rudder, in fact, the difficulty of control has been assessed in the proportion—rudder, elevator and aileron as:—6:2:1 for nearly all pilots on at least four widely different

types of aircraft, including twin-engined, heavy aeroplanes. In consideration of the fact that practically all errors are due to yawing, probably owing to faulty use of the rudder, or unappreciated effects of aileron drag, it is evident that the turn indicator must be the basis of instrument flying.

Training in Stages

In training, the method which has been adopted as a result of natural evolution enables a pilot to build up his efficiency in stages, starting with the use of the rudder alone, then the elevator alone, then ailerons alone, and then gradually combining any two, and finally all three, until after, say, eight hours, co-ordination is achieved.

Skill in Blind Flying can only be achieved by painful experience and the development of concentrative powers not usually called upon in flying. Nobody likes Blind Flying for its own sake, but no pilot's technique is complete without a reasonable degree of skill in this direction. The pilot who can fly blind, in the full sense, should be able, entirely blinded, to take off, climb, fly really straight and level, turn to change course as often as desired, spin and recover, recover from any attitude without unnecessary loss of height, glide and change course on the glide, and be able to correct for nose-and-tail heaviness or lack of lateral trim. Such is the standard which should be aimed at when training pilots to fly blind, and results have already proved that the average pilot is capable of achieving this with proper training.

In conclusion, it would perhaps be well to emphasise that an enhanced morale is a direct result of ability on the part of a pilot to compete with unexpected or known fog or cloud, and morale plays a very strong part in the ordinary duties of a pilot.



A view along the main road through the school. The buildings on the left are the pupils' quarters where each one is provided with a comfortable and well-fitted bedroom. (FLIGHT Photo.)

THE SCHNEIDER CONTEST

How and Where to See it

THE Royal Aero Club has now announced details of the course for the Eleventh International Contest for the Jacques Schneider Seaplane Trophy, which is scheduled to take place on Saturday, September 12. The course will this year be a triangular one, measuring 50 km. (31 miles), and 7 laps of it will have to be flown, giving a total distance of 350 km. (217.35 miles). One turning point will be off St. Helens (near Bembridge, Isle of Wight). This is the southern turning point. The western turning point will be between West Ryde Middle and East Ryde Middle Shoals, and the eastern turning point will, for the first time, be situated on land, at West Wittering, just east of Chichester Harbour. This arrangement of the turning points will result in the machines flying close along the Hampshire coast, so that spectators on the coastline from Wittering to Portsmouth will get an excellent view. On their way from Ryde Middle to St. Helens the machines will fly along the coast of the Isle of Wight, with Ryde Pier affording a good view.

We would remind our readers that this year three nations have entered machines—Great Britain, France and Italy, each country being represented by three machines. The advance party of the Italian team is due to arrive at Calshot on August 12, and the rest of the team will arrive on August 26. The French team is also expected about that date. All will be stationed at Calshot and will carry out their practice flights from there.

Arrangements for Spectators

The Royal Aero Club has made arrangements with the White Star Line for the S.S. *Homer* to be the Club's "Official Ship." The *Homer* is also available to members of the Royal Air Force Club, the Royal Aeronautical Society, the Air League, the Society of British Aircraft Constructors, and the Associated Light Aeroplane Clubs.

During the contest the *Homer* will be berthed in close proximity to the western turning point on Ryde Middle, and, from her, spectators will have an excellent view not only of the contest but also of the preliminary navigability tests, which precede the actual contest.

The *Homer* will be available for the accommodation of first-class passengers at Southampton Docks on Friday, September 11, at 7 p.m. Passengers may remain on board until 11 a.m. on Sunday, September 13, when they will be disembarked at Southampton. The vessel will not be available after 6 p.m. on Monday, September 14. If the contest does not take place on September 12, the *Homer* will remain at anchor until 6 p.m. on Sunday, September 13. An extra charge of one guinea will be made for remaining on board. If the contest is postponed until Monday, September 13, the vessel will remain at anchor until 6 p.m. on that date, the extra charge per passenger being in that case two guineas.

The charge made on board the *Homer* ranges from 6 to 12 guineas per berth, according to the accommodation. This figure covers dinner and dance on Friday, September 11, breakfast, lunch, tea, and dinner and dance on Saturday, September 12, and breakfast on Sunday, September 13. The total first-class accommodation is 475 berths, in one, two and three-berth cabins.

An Official Banquet, at which the Schneider Trophy will be presented, will be held on board on September 12, if circumstances permit.

Two Schneider Team Pilots Killed

It is with the very greatest regret that we have to announce this week the deaths of two pilots of the foreign Schneider Trophy teams. On July 30, M. Bougault, one of the pilots selected to the French Schneider team, was flying a high-speed seaplane over Etang de Berre, near Marseilles, when the machine dived into the water and crashed, the pilot being killed instantly. It is thought possible that the accident may have been caused by the breaking of the airscrew, which would shake the engine loose and cause the machine to get out of control. M. Bougault was a well-known French pilot, and accompanied Guilbaud in the famous flight from Paris to Madagascar. The other Schneider pilot to lose his life during practising for this year's contest was Capt. Giovanni Monti, who was one of the Italian Schneider team in 1929, and actually took part in the contest over the Solent.

Those wishing to take accommodation are requested to make early application to the managers of the White Star Line, Royal Mail House, Leadenhall Street, London, E.C.3, or at 1, Cockspur Street, London, S.W.1. Application should not be made to the Royal Aero Club.

On board the *Homer* the White Star Line is arranging for tourist accommodation for the day of the race at 30s. per head, this figure including breakfast, lunch and tea, and transportation to Southampton. Passengers on this class will join the vessel at Southampton not later than 8.30 a.m. on September 12, and will be sent from the *Homer* to Southampton by tender after the contest.

At West Wittering

The Royal Aero Club has taken over the area on which the eastern turning point is situated. The land adjoining will be used for car parks under the management of National Car Parks, Ltd. Members of the Royal Aero Club have the benefit of a reduced charge of two guineas per car. No charge will be made for car occupants. It is advised that luncheon baskets be taken, as refreshments on the spot cannot be arranged. West Wittering is approached by a main road direct from Chichester, and cars displaying car park tickets will be given precedence in the traffic.

Application for car park tickets to West Wittering should be made direct to: Piccadilly Circus Garage, Ltd., Denman Street, Piccadilly Circus, London, W.1.

At Portsmouth and Southsea

The Portsmouth Corporation is making special arrangements in connection with the contest. An Official Royal Aero Club enclosure will be located on South Parade Pier, Southsea, where the progress of the contest will be announced by loud speakers. Luncheons will be obtainable on the pier. A car park will be placed as close as possible to the pier. Tickets at one guinea each, to members of the Royal Aero Club, will admit to enclosure and car park. Application should in this case be made direct to the Royal Aero Club, 3, Clifford Street, London, W.1.

The Portsmouth Corporation is also preparing extensive car parks on the front, where cars will be accommodated at a flat rate of 3s. 6d. per car. Seats in reserved enclosures in front of Southsea Castle will cost 5s. and 7s. 6d. Loud speakers will announce the progress of the contest. Application for tickets to the Corporation car parks and reserved enclosures should be made direct to the Town Clerk, Guildhall, Portsmouth.

Visitors by Air

The official landing ground for visitors arriving by air to see the Schneider Contest from Portsmouth is the Municipal Aerodrome, which is located 2½ miles north-east of Portsmouth Guildhall. The following charges will be made:—

Aircraft Class.	Landing Fee.		Parking Fee.	
	s.	d.	£	s. d.
AA	2	0	1	0
A	2	6	2	6
B	5	0	5	0
C	10	0	1	0 0
D	10	0	1	0 0

On August 3, Capt. Monti was flying a high-speed seaplane over Lake Garda, when he crashed into the water.

The Air League's New Secretary

CAPT. A. J. BARLOW, who until recently was Assistant Secretary to the S.M.N.T. and who served with the R.F.C. during the war, has been appointed Secretary to the Air League of the British Empire.

S.B.A.C. Officers Elected

THE following have been elected as Officers of the Society of British Aircraft Constructors, Ltd., for the year 1931-2:—Chairman, Mr. J. D. Siddeley, C.B.E. (Armstrong Siddeley Motors, Ltd.); Deputy Chairman (Aircraft), Mr. H. Burroughes (Gloster Aircraft Co., Ltd.); Deputy Chairman (Engines), Mr. H. J. Thomas (the Bristol Aeroplane Co., Ltd.); Hon. Treasurer, Mr. J. Lord (Saunders-Roe, Ltd.).

R.A.F. CADET COLLEGE, CRANWELL

THE following are Extracts from the Report of Air Vice-Marshal A. M. Longmore, C.B., D.S.O., Commandant of the Royal Air Force College, Cranwell, at the Passing-out Inspection of Flight Cadets, July 1931. The inspection was carried out by Air Vice-Marshal Sir Charles L. Lambe, K.C.B., C.M.G., D.S.O., Commanding the Coastal Area.

Strength

The present strength of the College is 126 as compared with 118 in July last. The present IV Term, now passing out, numbers 30 cadets, of whom one has not completed the course owing to prolonged absence in hospital.

Discipline

The conduct and discipline of the Cadet Wing during the period under report has been very good and does credit to the Under-Officers and Non-commissioned Officers of the senior year.

In two cases severe disciplinary action has been necessary. The first case was one of persistent breaches of College regulations, for which the offender was sentenced to lose one term.

The second case was one of complete disregard of the Standing Orders relating to Flying. A pupil indulged in certain aerobatics which are strictly forbidden, which resulted in his aeroplane breaking up in the air, he being very fortunate to escape safely by parachute. The offending pupil in this case was rusticated and sentenced to lose one term.

Flying Training

Twenty-nine Cadets of the IV Term have finished their Flying Training. Cadets going to Fighter Squadrons have all qualified on Siskins and the remainder on the Atlas. In addition all those Cadets who may be called upon shortly to fly the High Performance Modern Day Bomber have been given some experience on the Fairey Fox aeroplanes. The average flying on all types throughout the course for this IV Term works out at 107 hours. The standard of flying as set by previous terms on graduation has been well maintained.

Flying Accidents

It is with deep regret that I have to report two serious flying accidents since January.

The first occurred in an Atlas aeroplane on February 13, 1931, when Flying Officer Antony Frederick Paul Anning, an instructor, and Flight Cadet Arthur Morland Acton-Adams were killed. Careful inquiry into the cause of this accident led to the conclusion that it was due to loss of flying speed on a gliding turn during approach for a practice forced landing. The instructor, who was an experienced pilot on this type of aeroplane, must have left the correction of this fault until a moment too late to pull the aeroplane out of the resultant dive.

The second accident occurred to an Avro aeroplane on May 12, 1931, when Flight Cadet Hugh Leslie James Bertram was killed whilst flying solo. Evidence in this case leads to the conclusion that Bertram, a promising pupil in his first term, stalled his aeroplane either through inattention or in a deliberate attempt to execute a manoeuvre for which he had not the height, being well below the altitude at which aerobatics are permitted.

Withdrawals from Flying Training

During the term it has been necessary for five British Flight Cadets to be withdrawn from training on account of their inability to learn to fly. Each of these Cadets was given the most careful consideration, tested and re-tested and ultimately, after varying periods, assessed finally as unsuitable. The proportion of the Cranwell entry who ultimately prove unfit for training as pilots is very small, perhaps 3 per cent., but there is always this possibility to be faced. Parents of candidates for the Cranwell entry would be well advised to arrange for their sons to have a little flying at a flying school or club to see how they take to the air before entering them as Flight Cadets.

Flying Organisation

A Flight of Siskin aeroplanes has been formed so that there are now two Atlas Flights and one Siskin Flight, each of eight aeroplanes. The amount of flying training done amounts since January to 5,030 hours, as compared with 4,228 hours up to the same date last year.

Health

The number of Cadets admitted to hospital during the present year is 55, or exactly the same number as for the shorter period from September to December, 1930.

Of these cases, 8 were due to motor-cycle accidents, 4 to flying accidents, 13 to minor accidents in games and elsewhere, 30 to miscellaneous illnesses.

There are still too many motor-cycle accidents, and the progress of certain cadets has been interfered with by absence in hospital due to this cause. Cadets must be again reminded that the assistance given by authority to the keeping of motor-cycles will have to be reconsidered if this continues.

Permanent Buildings

Good progress has been made during this year in the erection of the new College buildings. Under present policy, it may be hoped that these will be completed during 1932, and ready for occupation in the following year.

Physical Training and Games

The standard of Physical Training is good.

In Boxing and Skill-at-Arms a satisfactory standard has been maintained. Matches against Sandhurst and Woolwich were only lost by small margins.



Air Vice-Marshal Sir C. L. Lambe, K.C.B., C.M.G., D.S.O., inspecting the Cranwell Cadets.

Although there were the makings of a good Hockey team, weather interfered seriously with practice. Woolwich beat Cranwell by 5 goals to 1.

Athletics were also seriously interfered with by weather. Five matches were played and of these four were lost and one was won. In each case the Cadets were up against men who were much older, and who were in full training, having just completed their inter-Collegiate matches. The College team did exceptionally well in the Triangular Contest, finishing second, two points behind Sandhurst.

The standard of Cricket has considerably improved this year. Sixteen matches have been played, of which 5 were won, 8 drawn, and 3 lost. Owing to bad weather, the match against the R.M.A., Woolwich, was abandoned.

The Goodman Riding Trophy was won by "C" Squadron and the individual winner was Flight Cadet J. W. W. Hurdall.

Keenness has been shown for rowing this season. The College crew competed at Boston and at Derby Regattas, and in the latter reached the semi-final.

Awards

The prize awarded to the Flight Cadet in the senior term obtaining the highest marks in Humanistic Subjects has been awarded jointly to Flight Cadet Sergeant Humphrey William Albert Chesterton and Flight Cadet Sergeant Archibald Campbell John Stone.

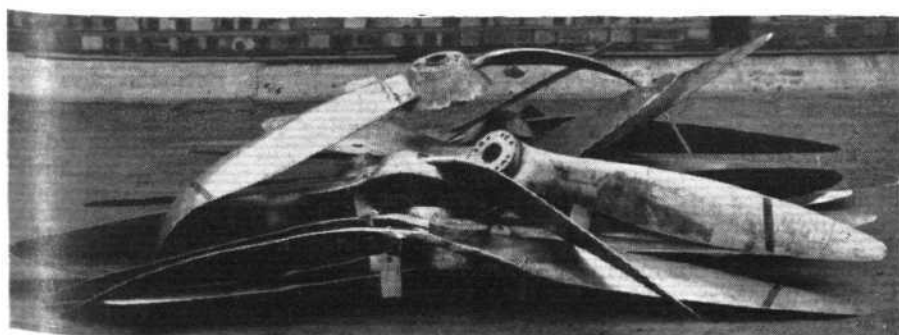
The prize awarded to the Flight-Cadet in the senior term obtaining the highest marks in Aeronautical Engineering has been awarded to Flight-Cadet Norman Calpo Simpson Rutter.

The Abdy Gerrard Fellows Memorial Prize for the Flight Cadet obtaining the highest marks in Mathematics and Science has been awarded to Flight Cadet Wilfred Ewart Oulton.

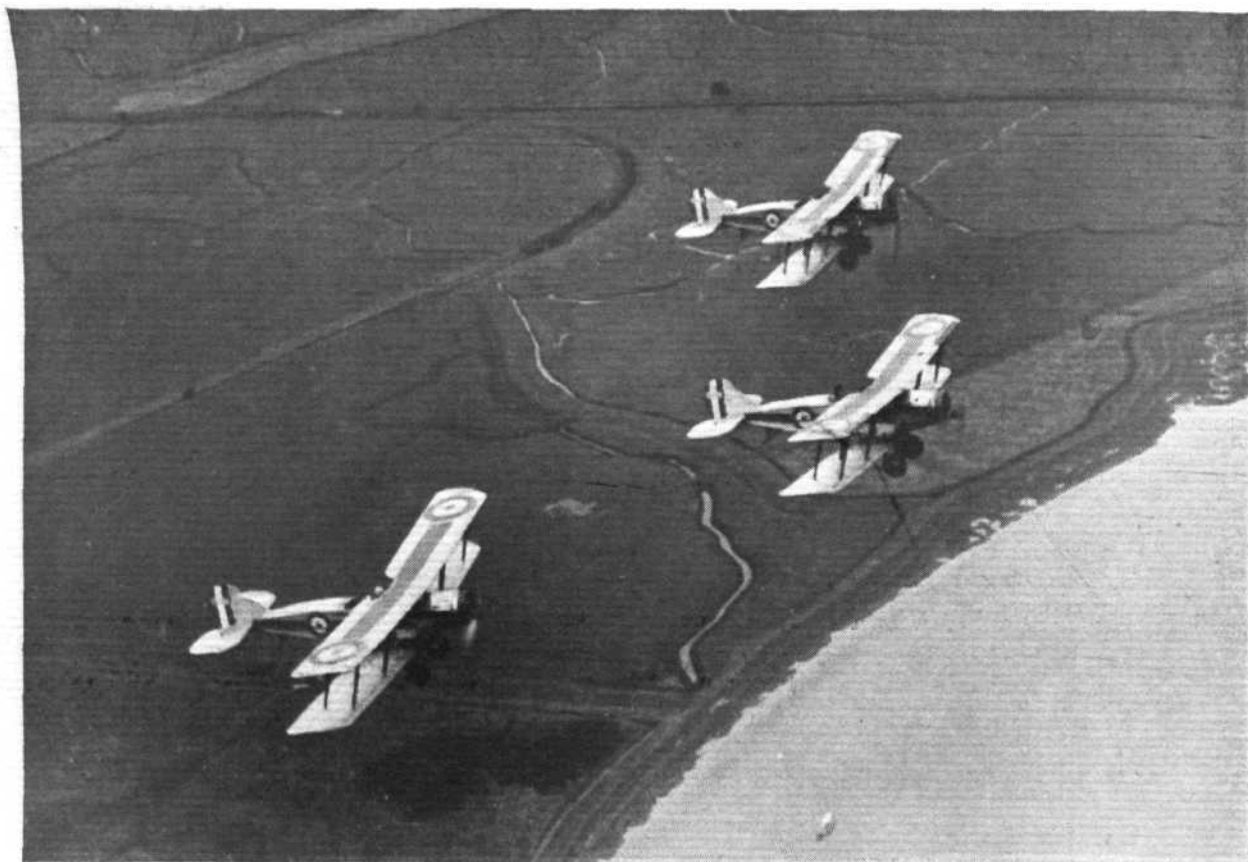
The J. A. Chance Memorial Prize, awarded to the Flight Cadet in the senior term obtaining the highest marks in Service Subjects, has been awarded to Flight Cadet Corporal Arthur Douglas Messenger.

The R. M. Groves Memorial Prize, for the best all-round Pilot in the senior term, has been awarded to Flight Cadet George John Lacey Read.

The Sword of Honour, presented to the best all-round Flight Cadet in the Senior term, has been awarded to Flight Cadet Under-Officer Christophe William Mitchell Ling.



FAIREY METAL AIRSCREWS: The Fairey type of metal airscrew lends itself exceptionally easily to repair when it has been damaged. Our photograph here shows a number of airscrews with bent blades, all of which can rapidly be re-shaped and made as good as new. It is for this reason that so many private owners are now using these airscrews. In the King's Cup race F/O E. T. C. Edwards, flying the winning machine, and Flt. Lt. F. G. Gibbons, flying the second machine, both used these airscrews.



OXFORD IN THE AIR: Formation flying by members of the O.U.A.S. An instructor is in the spare seat of the leading machine but the pilots are all undergraduates. (FLIGHT Photo.)

OXFORD UNIVERSITY AIR SQUADRON

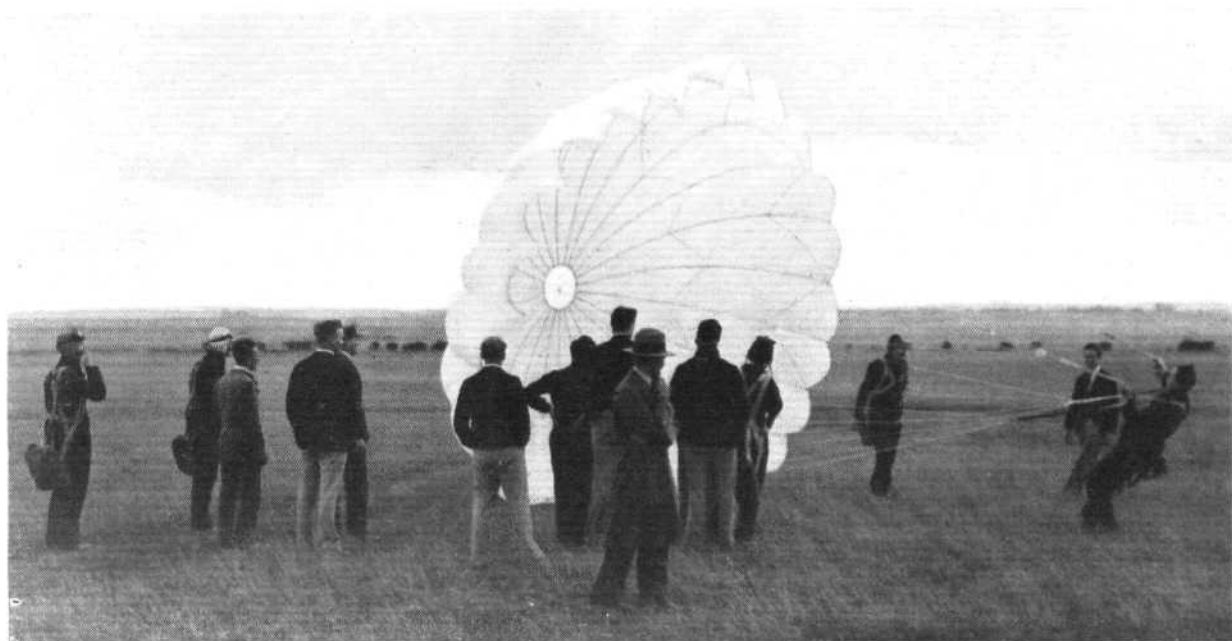
A VISIT to a University Air Squadron during its annual attachment is always an exhilarating experience. *Punch* recently had a picture of a boy who told his father that he would not go in for flying because it was "too effeminate." Perhaps it is the complete absence of the effeminate element which makes the atmosphere of a University Air Squadron so refreshing. Yet, be it admitted, Oxford, no less than the Great Feminine, can produce a winner of a King's Cup. F./O. E. C. T. Edwards, this year's winner, learnt his flying in the O.U.A.S., of which he was a member from 1925 to 1927. His younger brother, H. R. A. Edwards, was in camp with the squadron this year, and is now awaiting news of the grant of a regular commission in the Royal Air Force. He promises to make as good a pilot as his brother.

In previous years the O.U.A.S. used to go to Manston for its annual training. This year it went to Eastchurch, which seems, on the whole, to have been preferred. True, it was very exasperating to have to respect the prohibited area at Sheerness when some very attractive men-of-war had gathered there for Chatham Navy Week; but there are flies in every ointment. The Isle of Sheppey is as nice and flat as the Isle of Thanet (may Carmelite House pardon the heretical comparison!), and the delirious joys of Margate and Ramsgate (so dear to the undergraduate heart) are further removed. The Eastchurch mess is quite as comfortable as that of Manston, and more historical. From the point of view of an air correspondent, it is easier to reach, and that, in truth, is the greatest advantage of all.

This year *FLIGHT* went to Eastchurch with very pleasant anticipations. An old contributor has just been appointed to the command of the O.U.A.S., and, doubtless in virtue of his artistic connection with the oldest aeronautical weekly in the world, has been created a statutory Master of Arts and a member of the Hebdomadal Council (whatever that may be). Take courage, ye present generation of contributors to *FLIGHT*! Every one of you carries a

potential membership of the Hebdomadal Council in the refill magazine of your Eversharp pencil. Yet stay—is it the Hebdomadal Council or is it merely Convocation? A non-resident graduate is apt to be hazy on these points. In any case the honour is substantial. To meet Wing Commander Roderic Hill, M.A. (and, incidentally, M.C. and A.F.C.), was a pleasure to which we keenly looked forward. But alas! Mr. Clive, a member of the squadron, a winner (with H. R. A. Edwards) of the Goblets at Henley and a competitor in the Diamonds, came to Eastchurch when Henley was over. Did he catch the prosaic complaint of measles at Henley? I used once to be warned against the danger of confusing *post hoc* with *propter hoc*. At any rate, he promptly went *aeger* and reported sick. Which of those terms is correct in the case of an Oxford man in a R.A.F. station is a matter of doubt. That was bad enough, but to make matters worse the Wing Commander caught the speckled germ and also retired to hospital, where the present representative of *FLIGHT* was unable to greet him and tell him how much he had enjoyed reading "The Baghdad Air Mail." Flight-Lieut. Mellersh, once a companion in arms of Roy Brown and "Wop" May, who had seen Richthofen's red triplane crash into the ground with Brown diving on its tail, made an efficient substitute as host. His theories on the cubic content of liquid measures were deplored and enjoyed. They keep very good draught at Eastchurch.

As everyone probably knows by this time, the squadron consists of 75 members, of whom it happens that this year two are Dons (representing History and Chemistry) and one a lecturer in Forestry. The remainder are either undergraduates or men who have recently taken their degrees. During term time they receive ground instruction at the squadron rooms in Oxford, and flying instruction at Upper Heyford, where the station flight looks after the aeroplanes. All members agree to go to the annual attachment in the long vacation. This lasts for six weeks, and 25 members attend at a time. In addition to the chief instructor and the instructor (or adjutant), seven flying



PULL DEVIL, PULL BAKER: A tug-of-war with a parachute. (FLIGHT Photo.)

instructors from the Royal Air Force attended this camp. The members are all accommodated in officers' quarters in the station. This year no one failed to attend, except one who strained his heart rowing at Henley—a victim in a worthy cause. It is during this camp that the serious flying training is done. When this camp opened, only 13 members had not yet flown solo, and by the end the whole squadron had qualified. Last year the flying hours during the six weeks of camp were 1,292. This year, in the first five weeks the total hours were 1,256, and at the date of our visit the progress had been so good that there was little doubt that the figure for the whole time in camp would handsomely exceed that of last year.

That the results of the instruction are good can be seen from the photographs which we publish. Never before, we believe, has a photograph been taken of a formation of "Bristol Fighters" all flown by members of a University squadron. An instructor sat in the spare cockpit of the leading machine, but that was only as a precaution. All the three "Brisfits" were flown by members. That the formation was well kept can be seen from the illustrations. But it was interesting to hear criticisms from other members on the ground, who evidently had a very high standard, and regretted the absence of So-and-so, who would, in their opinion, have done still better. Personally we could find no fault, and have certainly seen worse

formation flying on occasions at the Hendon Display.

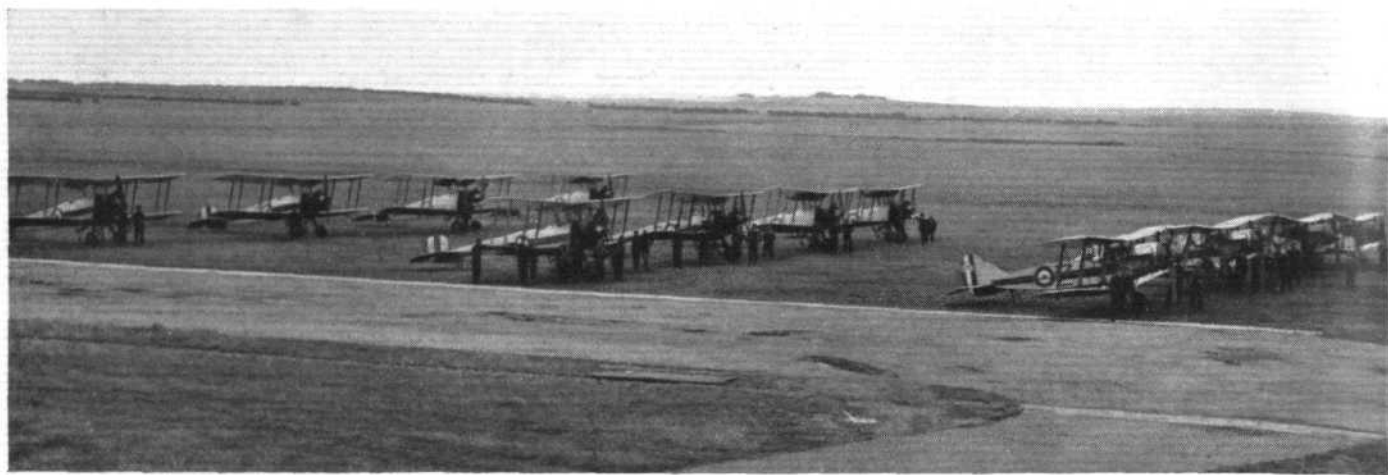
A good deal of solo cross-country flying is done, and one member, Mr. Cresswell, was chosen to fly up to Leuchars, Renfrew, and back; but the weather turned out bad, and this flight had to be abandoned. A very enjoyable and interesting experience was an expedition to Martlesham and Felixstowe. One party flew up to Martlesham in the squadron's machines, while another party was taken from Sheerness to Felixstowe in R.A.F. flying-boats. On the return journey the two parties changed places.

Ground instruction is also carried out vigorously during the camp. In the second week of each course the members attended very practical and comprehensive lectures at the Armament and Gunnery School, which is stationed at Eastchurch.

The members of the squadron undertake no military obligations when they join. The Air Ministry regards the University squadrons as very special flying clubs. It is desired to spread air-mindedness in all sections of the population, and it would have been a badly lost opportunity if Oxford and Cambridge were not drawn into the net. The Ministry, we consider, gets very good value for its money. For one thing, a University is a recognised avenue for gaining a regular commission in the Royal Air Force. There is nothing novel in this idea; for years past the War Office has granted University commissions in



OXFORD UNIVERSITY AIR SQUADRON: Members and Instructors at Eastchurch. (FLIGHT Photo.)



THE DARK BLUE AEROPLANES: Four "Bristol Fighters" and eight "Lynx-Avros" at Eastchurch. A dark blue line is painted on each fuselage. (FLIGHT Photo.)

the Army. Air Force officers must be taught to fly before they get their commissions, and something roughly equivalent to the O.T.C. was obviously necessary. The squadron provides this flying training. This year five members of the O.U.A.S. have been selected for regular commissions. But the gain to the State does not end there. In the present composition of the O.U.A.S. there are 26 members who are officers in the Air Force Reserve. That is a valuable and very inexpensive addition to the defence forces of the country. Each year about 20 R.A.F.O. are provided by Oxford. Of course, the Reserve officers get training at the civilian schools as well as in the University squadron, and consequently make faster progress.

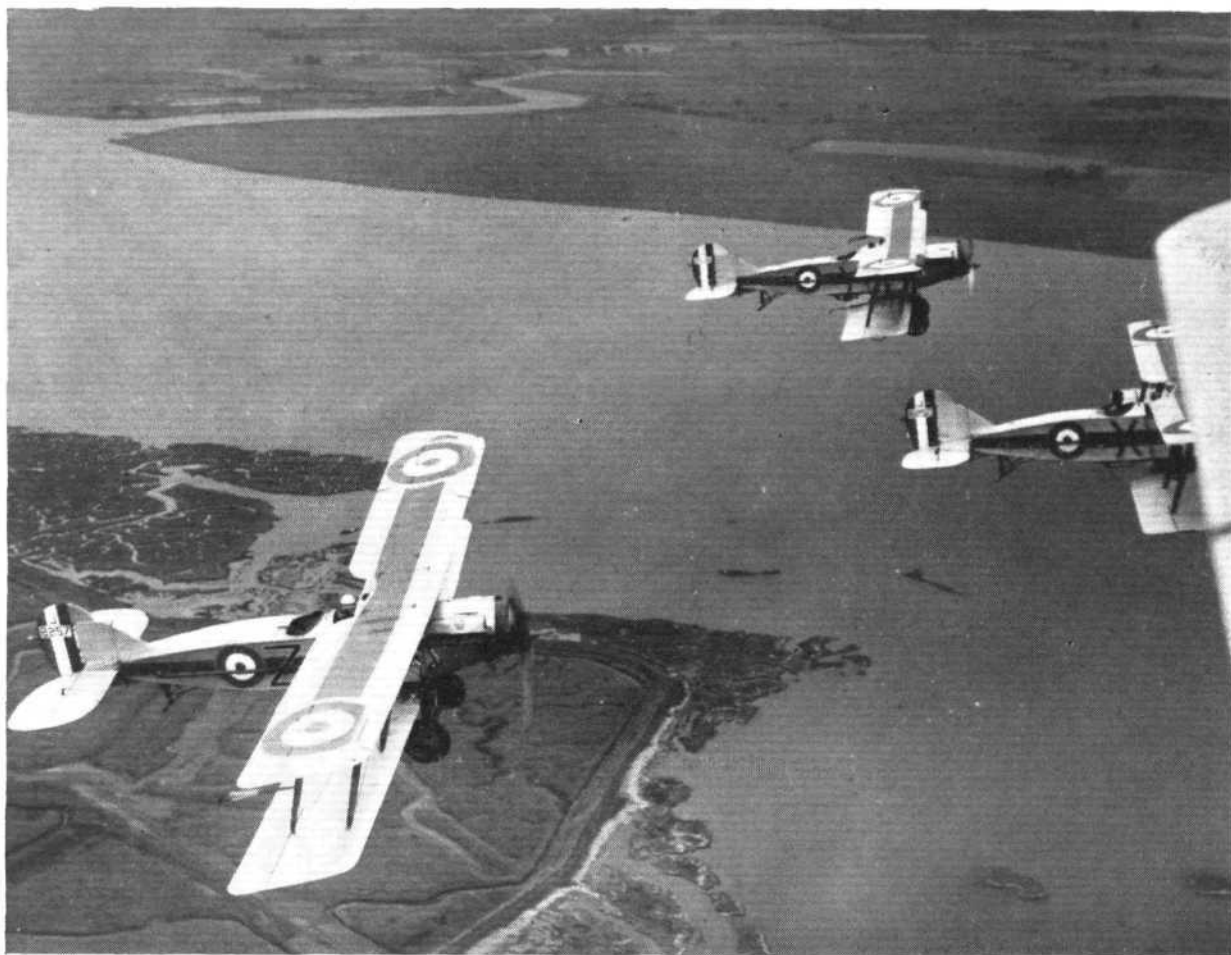
The composition of the squadron is distinctly interesting. The majority of the men are reading classical schools, but they seem to fly none the worse than those with an engineering turn of mind. Among the present 75 there are six Rhodes scholars. Most of the colleges are represented according to their size. Christ Church, as the largest college, has 10 members. Balliol comes second with six. Athletics are largely represented, but, strange to relate, the R.A.F. medical officers sometimes turn down a prominent athlete. Quite recently a pole-jump Blue was refused; which certainly seems astonishing. The grounds for such rejections, we understand, are usually not really physical, but are on account of eyesight. Still, athletes do loom large in the Oxford Squadron. It would be strange if it were otherwise, considering the numbers who want to join it. H. R. A. Edwards and Clive were mentioned above. They won the Goblets at Henley. Both the Edwards brothers have rowed in Varsity crews. In the last Varsity race the younger Edwards did not row, as he was busy over his Schools and could not afford the time. But at Henley this year he rowed No. 5 in the London VIII, which won the Grand; and he rowed 3 and steered in the London four which won the Stewards. Another member of the squadron is D. C. G. Raikes, who kept wicket so well in the historic cricket match this year, and only let five byes be added to the huge Cambridge total. Another member is W. L. Lang, who won the long jump for the combined English Universities against Yale and Harvard. H. G. Lafleur is a member of the Oxford Ice Hockey team which beat practically all Europe. He is a French Canadian. Mr. Belton has already seen something of life outside academic circles, for he has worked in Persia for the Anglo-Persian Oil Co., and claims to have discovered a valuable well himself. Another member of the squadron

is to join the staff of the Royal Aircraft Establishment. Taking things all round, the above by no means exhaustive account of the members and their qualifications shows that they are a very useful lot of men, and it is good to think that they are all members of the flying community. The winning of the King's Cup by a recent member of the squadron on a day which required the highest degree of piloting skill is not the least ground which the Oxford Squadron has for feeling satisfied with its work.

It is to be regretted that there is no Chair of Aeronautics at Oxford. If there can only be one such institution at a residential University, then it must be admitted that Cambridge, with its well-known devotion to the sciences, had the prior claim. Still, it would be a good thing if one could be founded at Oxford as well. If that were to happen, it would tend to increase the dignity of the squadron. Dons have a great capacity for despising pursuits which fall outside their own little circle of interests; but no Don can pretend to despise a science which can boast a professorial Chair at his own University. From that it would follow that the said Don must respect men, even undergraduate men, who pursue the art with which that science deals. Dons have come to realise that there is merit in gaining a Blue. They reached that point some years ago. We wonder, are the two Dons and the one lecturer who belong to the Oxford Squadron typical of Oxford Dons in their attitude towards flying, or is it still generally regarded as one of those foolish things which undergraduates will persist in doing? The aeroplane cannot yet be regarded as the motor car is regarded, with



Flt.-Lt. Mellersh, A.F.C. discourses on the elevators. (FLIGHT Photo.)



WHAT HAS THE ISIS COME TO? The formation flown by members of the O.U.A.S. over the Thames near Sheppey. The instructor can be seen in the leading machine, but the pilots are all undergraduates. (FLIGHT Photo.)

some justification, at the Universities. The latter tends to make for individualism, which is a tendency somewhat contradictory to the spirit of College and University life. The aeroplane, on the other hand, is an interest which is controlled by the squadron authorities, and it makes one more University interest, and one which draws men from different Colleges together. From what we have seen, we should judge that it is a very healthy addition to University life. We write this, not merely as enthusiasts for the air, but recognising that anything which detracted from the proper spirit at Oxford would do more harm than good to the nation. It is a great satisfaction to think that both the University and flying have benefited by the existence of the O.U.A.S.

Wing Commander Roderic Hill may not feel that he has made a very happy *débüt* as Chief Instructor. An attack of measles after childhood has passed is not likely

to put a man in a good humour with anything. Despite this misfortune, we think that he has begun his period of command at Oxford in very favourable circumstances, for the squadron is certainly a good going concern. We have no doubt that he will bring it to still greater efficiency during his tenure of his appointment. The Air Ministry, we believe, has made a very happy choice of a chief instructor, considering that it was obliged to go outside the ranks of Oxford men. No doubt one of the objects which Wing Commander Hill places before himself is to ensure that before long there will be a sufficiency of Oxford men holding sufficiently high rank in the Royal Air Force, so that there will be no need to go outside their ranks when choosing a chief instructor for the Oxford Squadron. It is an appointment which must be one of the most pleasant open to a member of Oxford University and to an officer of the Royal Air Force. F. A. DE V. R.

A New Flag Command

On August 4 the Admiralty announced the following flag appointment: "Rear-Admiral Reginald G. H. Henderson, C.B., to be Rear-Admiral Commanding Aircraft Carriers, to date September 12."

This novel step in naval organisation is much to be welcomed, and we understand that for some time past it had been expected in naval circles. To group all the aircraft carriers together as a single flag command must add to the dignity and importance of the Fleet Air Arm. Of course, we do not imagine that all the seven carriers are to be mobilised as one unit for operational purposes. They are needed in different parts of the world to co-operate with various fleets. The command given to Rear-Admiral Henderson must be administrative. It should make for unity of policy in dealing with all matters concerning the F.A.A. The *Courageous* is fitted for duty as a flagship, and Rear-Admiral Henderson will probably fly his flag in her. She and the *Furious* are attached to the Atlantic Fleet, but the latter is under refit. The *Eagle* and the *Glorious* belong to the Mediterranean Fleet, but both are at present under repair. The *Hermes* is in China. The *Argus* and *Ark Royal* are in reserve. Doubtless, visitors to Chatham Navy Week are taking a good deal of interest in the *Ark Royal*. It is interesting to recall that the

United States carriers have for some time past been under the command of a flag officer.

Awards to Airmen

THE *London Gazette* for July 31 announced that the King has approved of the award of the medal of the Military Division of the Order of the British Empire to the undermentioned members of the R.A.F. for services rendered in connection with the operations on the North-West Frontier of India between April 23 and September 12, 1930:—Flight Sergeant A. R. Clarke, Flight Sergeant C. Littleproud, Sergeant S. T. Rainsbury, Corporal A. F. Roberts, Corporal P. R. Streeter, Corporal D. E. Sutherland, and Leading Aircraftman W. Bainbridge.

No. 601 (County of London) (Bomber) Squadron

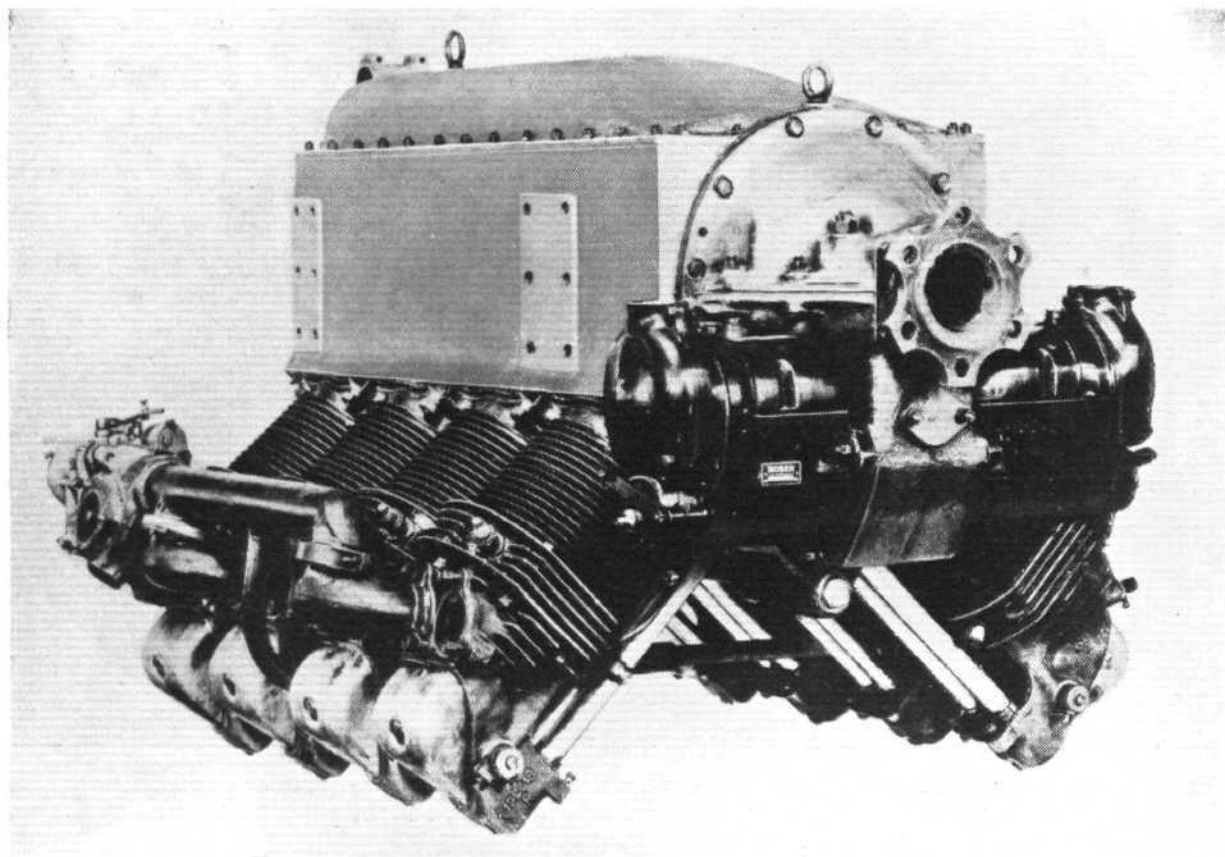
THE County of London B.S., under the command of Sqdn. Ldr. Sir Philip Sassoon, began its annual training at Lympne aerodrome on Saturday, August 1. The squadron flew down from Hendon to Lympne in formation. The total strength in camp is about 150 officers and airmen, including a small proportion of regular personnel.

A Flying Boat Cruise

THE flying boats *Singapore II* (four Rolls Royce Kestrels) and the *Saro A7* (three Bristol Jupiters) are to start on August 16 on a cruise to the Mediterranean and beyond.

THE NEW ARGUS 8-CYL. ENGINE

By EDWIN P. A. HEINZE



THE new eight-cylinder inverted motor of the Argus Motoren-Gesellschaft of Berlin-Reinickendorf has now passed the official German type tests, and will shortly be introduced on the market. The new motor is a further development of the very successful inverted four-cylinder type, which gained the first three places in last year's Grand European Air Competition. The four-cylinder model originally had an output of 80 h.p., which recently has been increased to 90/110 h.p. The new eight-cylinder motor is in all main points similar to this improved type, having the same cylinders, cylinder heads, pistons, valves, and pump.

Instead of one perpendicular row of four cylinders, it has two rows of four, arranged at an angle of 90 degrees to one another. The crankcase is an Elektron casting, and the finned cylinders consist of forged steel worked from the solid metal. The four-throw crankshaft runs in four plain bearings, which type of bearing is also employed to take up propeller thrust. Master and link connecting rods are employed, together with aluminium alloy pistons having each two compression and one oil scraper ring. The cylinder heads consist of a special aluminium alloy, with screwed-in bronze seats for valves and plugs. There is one inlet and one exhaust valve for each cylinder, with two coil springs, and operated through pushrods and rockers from a single camshaft located below the crank-

shaft. The pushrods are enclosed in aluminium tubes, and rockers and valves have cast aluminium covers. These parts are lubricated by grease gun, while the interior of the engine is lubricated under pressure from a triple-gear pump drawing and delivering the oil in a special tank in the crankcase cover on top of the engine.

Two special Sum carburettors are being used, and the inlet manifolds are heated by the exhaust gas. Two Bosch magnetos are mounted athwart the front end of the engine, below the propeller shaft. For starting the engine a similar crank device is provided, as in the four-cylinder model. But, if desired, the engine can also be fitted for compressed-air starting. Fuel is supplied by means of a diaphragm pump.

The cylinders have a bore of 120 mm., the pistons a stroke of 140 mm., making a piston displacement of 12,667 c.c. With a compression ratio of 5.35 to 1 and at 1,920 r.p.m., the engine delivers 195 h.p. The permissible maximum output is 220 h.p. at 2,000 r.p.m., and the highest permissible engine speed 2,100 r.p.m. The dry engine weighs 455 lb., including hub, starting crank, cooling cowl, and exhaust pipes, and its over-all measurements are: Length, 40.8 in.; width, 32.3 in.; height (including cowl), 27.16 in. Cooling is effected by the air being drawn in between the cylinder rows and passing out sideways between the cylinders.

Instructors' Certificates

IN FLIGHT for July 24, we described on page 738 the latest regulations which have been drafted by the Guild of Air Pilots with regard to the issue of Instructors' Certificates. Application forms and particulars of the tests have now been drawn up, the latter comprising an oral test with questions on the following subjects:— Passenger flying, taxiing and handling of engine; effect of controls (including aileron drag); straight and level flying; stalling, climbing, and gliding; taking off into wind; landing and judging distance; medium turns; gliding

turns; steep turns with and without engine; spinning; elementary forced landings; low flying (with Instructor only); solo; climbing turns; side slipping; action in the event of fire; taking off and landing across wind.

In the flying test the examiner will go up as a pupil with the candidate and re-examine on certain of the above questions at his discretion. The following are, however, compulsory:—Take-off, landing, spin, forced landing. In the list of pilots comprising the Panel of Examiners, Capt. H. D. Davis should have been described as the Chief Instructor of Brooklands Aviation, Ltd.

AIRISMS FROM THE FOUR WINDS

A Fine Japanese Flight

On Saturday, August 1, the two Japanese pilots, M. Kurimura and R. Kumakawa, landed their Ishikawajima R.3 (Hermes II) at Hanworth Aerodrome about 3 p.m. This concluded the first stage of their flight from Tokyo, and proves, not only the ability of their Japanese-built aircraft to stand up to the arduous conditions of a flight of such length, but also their own ability as pilots, and last but not least, the ability of our Hermes engine to carry both them and their aircraft safely to England. They left Tokyo on May 29 and came in a comparatively leisurely manner to London via Mukden, Harbin, Irkutsk, Krasnoyarsk, Nazan, Moscow, Königsberg, Berlin, Brussels, London. Next Monday they will leave for the final stage of their flight to Paris, whence they will continue via Lyons, Marseilles, to Rome, making a total distance of some 8,830 miles. Col. Sempill, together with members of the Japanese Embassy, greeted the two Japanese pilots on their arrival in England at Croydon aerodrome. At Hanworth, Mr. Noel Smith represented National Flying Services, Ltd., and Mr. Watkins the Cirrus-Hermes Engineering Co. Both Mr. Kumakawa and Mr. Kurimura are students from the Tokyo University, and this flight is merely their idea of the best way to spend a pleasant vacation. That they have got through successfully speaks well for their ability and their determination, for the difficulties with which they have had to encounter have been very considerable. Naturally, for such a flight they took good care to use only the very best equipment possible, and it was for this reason that they chose K.L.G. plugs, a Claudel Hobson carburettor, Shell petrol, Mobiloil lubricating oil and Smith's instruments. Their tyres were, incidentally, a Japanese product, since these were made by the Japanese Motor & Aeroplane Tyre Manufacturing Co., of Tokyo. The machine itself was described briefly in FLIGHT for last week.

New York—Constantinople

MR. JOHN POLANDO and MR. RUSSELL BOARDMAN, who left New York on July 28 in a Bellanca monoplane with the object of making a non-stop flight to Constantinople, landed at Yeshilkeuy aerodrome outside Constantinople during the afternoon of July 30, having been in the air for some 49 hours. The route followed was via Newfoundland, Ireland, London, Paris, and then direct. The actual great circle distance with which they will be credited is not yet known, but it is thought that it will beat the existing world's record for a non-fuelling flight in a straight line.

After the Post-Gatty Record

MR. HUGH HERNDON and MR. CLYDE PANGBORN, who left New York on July 28 in a Bellanca monoplane with Pratt & Whitney "Wasp" engine, landed at Moylegrove, near Cardigan, South West Wales, on July 29. Next morning they continued on to Croydon on July 30, and left again in the afternoon for Moscow via Berlin. Berlin was reached during the morning of July 31, and a start made the same afternoon for Moscow, which was also successfully reached. Leaving again, the aviators had to make a landing at Jiettegari on the morning of August 1, but they got going again and arrived at Omsk, leaving again for Chita, which was reached on August 2. On August 3, Herndon and Pangborn landed at Khabarovsk, on the Russo-Manchurian border, and it has since been announced that they are abandoning the attempt to beat Post and Gatty's record for a flight round the world.

Mr. Mollison Going Strong

MR. J. A. MOLLISON, who is on his way to England from Australia in a Gipsy Moth, is so far slightly ahead of Mr. Scott's time. On July 29 he landed a few miles south of Batavia, and on the following day he reached Singapore. Rangoon was attained on July 31 and Calcutta on August 1. By the evening of August 2 Mr. Mollison had reached Karachi, and on August 3 he was at Basra. Aleppo was attained on August 4, and he arrived at Athens on August 5, at 8.30 a.m., continuing towards London two hours later.

Lindbergh off Again

COL. CHARLES LINDBERGH and his wife left New York on July 27 in a Lockheed monoplane *en route* for Japan and China via Canada and Alaska. On July 30 they arrived at Ottawa, and Moose Factory was reached on August 1. On August 2 they left for Churchill, Manitoba, where they arrived safely.

Refuelling Flight Abandoned

ROBINS and JONES, the two American aviators who

were attempting to win the £5,000 prize offered by a Japanese newspaper for a non-stop flight from America to Japan, were forced to come down in the Lower Yukon Valley on August 3, as they had run out of fuel. In a thick fog they got separated from the machine which was to refuel them in the air.

Miss Johnson's Progress

MISS AMY JOHNSON who, with Mr. Humphreys, her Ground Engineer, left Lympne on July 28, reached Moscow on the evening of that day. On July 29 she reached Kazan, and July 30 she reached Sverdlovsk (formerly Ekaterinburg) in the morning, continuing in the afternoon and reaching Omsk on the morning of July 31. A start was made later for Krasnoyarsk, but a landing had to be made at Tiajin, near Mariinsk, in Siberia, on account of darkness. On Saturday morning another start was made, and Irkutsk was reached Saturday evening, August 1. On August 2 the travellers got to Chita, and on August 4 to Hailar on the way to Harbin.

"Graf Zeppelin" Back from Arctic Flight

AFTER a successful cruise in the Arctic regions, the *Graf Zeppelin*, which left Friedrichshafen on July 24, has arrived home safely, reaching Friedrichshafen on July 31. On the way home she made a stop at Berlin. Although the airship was able to receive wireless messages, it was found that her transmissions could not be received by the "outside world" from the Arctic regions. A considerable area was surveyed during the cruise.

"Graf Zeppelin" to visit London

NATIONAL FLYING SERVICES announce that the *Graf Zeppelin* will pay its postponed visit to London on August 18. She is due to arrive at Hanworth in the evening, and after a short stop to pick up passengers the airship will leave again on a 24 hours' cruise around Britain.

Cobham gets to Khartoum

SIR ALAN COBHAM, who is making a survey flight to Central Africa in a Short "Valetta" (three Bristol "Jupiters") twin-float monoplane, arrived at Khartoum on August 2. Sir Alan is, among other things, trying out the twin-float seaplane to see how it compares for river work with the flying-boat of approximately the same size and power.

The Prime Minister in the Air again

MR. RAMSAY MACDONALD, the Prime Minister, left Hendon aerodrome in a R.A.F. aeroplane on August 1 *en route* to Lossiemouth. A landing was made for fuel at Catterick, and a call made at Cramlington on account of mist north of Newcastle. Later a start was made, and the machine landed at Leuchars at 3.20 p.m.

Planes Guard Seal Herds

ACCORDING to the *Canadian Gazette*, Canada found another new use for aircraft this year when, for the first time, aircraft were employed in connection with the patrol of Pacific seal herds moving north to the Pribilof islands in Bering Sea. The patrol was conducted by H.M.C.S. *Armentieres* and H.M.C.S. *Vancouver*, and each ship had with it one of the planes of the Royal Canadian Air Force. Flying Boat 110 was attached to the *Armentieres*, which was on seal patrol duty for some three weeks of April, and Vedette 108 was with the *Vancouver*, which did patrol work for a similar period in May. Unfavourable flying weather hampered the operations of the machine with the *Armentieres*. The weather gods were kinder later on, however, and the seaplane with the *Vancouver* was in the air on patrol service for something more than thirty-six hours' flying time. Patrols were made by the planes westward of Calvert Island, north and west of Milbanks Sound, north of Graham Island, in Hecate Strait, and elsewhere. Under the Pelagic Sealing Treaty the fur seals are protected against capture by private enterprise, except that aborigines of the countries concerned—Canada, the United States, Japan, and Russia—may hunt the seals with spears from boats propelled by oars or sails.

Hand Bells for Seaplanes

THE Air Ministry announces that:—To comply with the International Regulations for Preventing Collisions at Sea, all multi-seater seaplanes, both float plane and flying-boat types, will in future carry bells for use as fog signals. Units equipped with seaplanes are to demand on the basis of one bell per float plane or flying-boat on initial equipment plus one spare per unit. Bells should not, however, be carried except in flying-boats until the modifications introducing the stowage position have been issued. In flying-boats, temporary but safe stowage may be provided in one of the fixed lockers.

PRIVATE FLYING AND CLUB NEWS

A NIGHT FLYING MEETING

ON Saturday last, August 1, Mr. Lindsay Everard, whose fertility of mind has been the means of staging some interesting event pretty nearly every week-end throughout the season, either at his own aerodrome at Ratcliffe or at the Leicestershire Aero Club's at Desford, held a Night Flying Meeting at Ratcliffe.

This is certainly one of the first occasions since the war on which a proper programme of flying events has been run at night, and the evening proved exceptionally attractive.

We were told that Mr. Everard had not advertised the meeting in any way, but to such an extent do the people of Leicester stick together that the word had evidently been passed round to every man, woman and child in the county, with the consequence that the crowd who witnessed the show must have numbered some thousands; at any rate, the police estimated the number of cars at well over 1,000, and, so far as we could see, both sides of the road were a mass of motor cycles and push bikes.

The aerodrome, of course, had been properly fitted for night flying, except that certain of the illuminations were of a temporary character. The boundary lights were of the oil-burning hurricane-lamp type, so beloved by every town and district council who spends money on their road repairs, and exceptionally good boundary lights they made; in spite of the handle on top of them, they were easily discernible from the air, and for the period of the meeting, at any rate, required no attention. The aerodrome itself has now been enlarged and carried down each side of Miss Winifred Spooner's house, making this an island site, with the result that it is somewhat like a miniature Hanworth, giving a run each side of the house of over 1,000 yds. On one corner of the "island" there is a beacon with a visibility of well over 30 miles, which, according to the Air Ministry, flashes "L". The Morse code, however, must have been reorganised, since everyone who saw it came to the conclusion that it was flashing fours "longs," however, despite that, it did its job very well and Mr. Jackaman, who flew up by night from Lympne, said he could see it from a very great distance. Mr. Jackaman's effort was quite a little event of its own. He is at present in camp with No. 601 (City of London) (Bomber) Squadron of the Auxiliary Air Force at Lympne, and, after having dinner there, he got out his own Puss Moth (Gipsy III) and flew straight up to Ratcliffe, arriving at about 9.45 p.m. When the meeting was about halfway through, that was somewhere about 11 o'clock, he left again and flew back to Lympne, where they were awaiting him with a new type of Chance floodlight. Of course, a trip like this denotes an entire and confident reliance on one's engine, but Mr. Jackaman has had so much experience that no doubt he felt quite justified in taking what risk there was; it does, however, show the way in which the possibilities of private flying have grown within recent years. Naturally enough, for such a trip, one would have to choose suitable weather, but once there are adequate arrangements for landing by night at several of the more important aerodromes about the country, the scope and use of aerial travel for busy men will greatly be increased.

The programme itself consisted at the start of a formation flight by Miss Spooner (leader) with Messrs. R. Stanford and A. Francis on either side of her. Their three Moths naturally carried navigation lights, while Miss Spooner's, in addition, was outlined along the bottom of the fuselage and underneath the lower plane with small lights, making a very effective picture for those who have not seen much night flying. Subsequently, there were displays of aerobatics by both the latter pilots, an illuminated parachute descent by Capt. Stewart and a set piece to finish up with. The parachute descent was probably one of the first ever made over here by night and caused quite a lot of excitement. On his way down Capt. Stewart lit up his parachute by shining the ray of a large electric torch directly up into it. He made a

good landing on one side of the aerodrome, although it looked at one time that he might overshoot a certain amount. As readers will know, we do not, nor ever shall, agree with parachute descents being used as a means of attraction at flying meetings, as we maintain that the risk is not justified. However, we do not wish to deprecate Capt. Stewart's effort, but only hope that if he must continue this sort of thing, he will confine himself to straight drops and not try to carry out spectacular stunts. After his drop there was an interval from flying, during which a small display of fireworks was let off. This formed a pleasant little interlude to the flying and roused the enthusiasm of younger members of the crowd to boiling point.

Miss Spooner then did a rather novel sort of turn by flying round with a large motor-car headlight in the machine, which she used as a modified form of spot light, shining it on the car parks and people round the edges of the aerodrome.

The set piece was to a certain extent the type of thing we see at Hendon, with lots of tribesmen and native women who captured a girl (Miss Spooner), whom they tied to a stake and were apparently preparing to roast, whether whole or in quarters was not quite evident, but the pot for the purpose certainly seemed rather inadequate! While the party were enjoying the spectacle of their captive writhing at the stake, two aircraft came and sat down and disturbed them thoroughly. The pilot of the leading one, evidently being a very fine shot, for he dispersed the heavily armed band, although himself was only armed with a pistol of very small calibre. At this juncture the young woman played a very dirty trick on him, for as soon as he had cut her loose she took to her heels, leapt into the cockpit of the machine and flew off, leaving him to his fate!

So far we have said nothing about the floodlight itself, and this deserves very special mention. We gather that it is a new and somewhat experimental product of G.E.C., Ltd., but that in its standard form it will differ very slightly from the one used at Ratcliffe. All the pilots who used its aid in landing said it was the finest type they had ever seen, and that the illumination provided was far better than from other types and more than adequate for their needs. It consists of a battery of nine elements, each consisting of a parabolic reflector and an electric lamp with a horizontal tungsten-wire filament, these elements being arranged in tiers of three, thus forming a large square projector. It is run from the ordinary 220/240-volt mains and consumes some 90 watts, giving at the present moment a total candle-power of 630,000 over an arc of 170 deg. but with certain modifications to the reflectors, round about one million is confidently expected to be the output of the standard type. One of its most amazing features is that the whole outfit costs somewhere about one-fifth of the other types of floodlights on the market, and, by virtue of it using lamps, this type does not require any adjustment during use. Mr. Lindsay Everard has had it mounted on a turntable affixed to the back of one of his more elderly Rolls-Royce cars, and the complete outfit is, therefore, very mobile and forms a compact unit, which can be taken to any suitable corner of the aerodrome, where electrical connections have been provided according to the direction of the wind.

Mr. R. H. S. Brown, the secretary of the Leicestershire Aero Club, was in charge of the organisation, and, together with his assistants, he carried it through without a hitch. Mr. Brown's main business in life is in establishing aerodromes, hangars and, in fact, everything to do with the ground equipment of flying for his firm, the En-tout-Cas Co., of Syston, but such is his keenness for the Leicestershire Club, that we fancy he must consider it a job of almost equal importance, to be run concurrently with his aerodrome work.

Mr. Lindsay Everard is really rather an exceptional man, for he is one of those rare people who, although blessed

with very considerable wealth, uses it in a sensible and profitable manner. The amount he has already done for aviation in Leicestershire is incalculable, and if he continues at the rate he is going there is no doubt that this county will be miles ahead of any other, not only in their enthusiasm but in the practical way they make use of aircraft. As a further example of Mr. Lindsay Everard's ingenuity and appreciation of the other person's point of view is the Church Service, which he has been able to arrange in conjunction with one of the local padres, to be

held at the aerodrome next Sunday. The difficulties which several clubs have had, due to their holding flying meetings on Sundays is well known, and, apparently, this actually occurred at Leicester some time last year. Now, however, Mr. Everard has brought this parson round to an aeronautical way of thinking, and instead of being antagonistic he is enthusiastic, with the result that he is holding this special Service, when no doubt every member of the Leicestershire Club who can get away will attend.

We must congratulate Mr. Everard on this original idea.

THE FIRST "WOMEN'S AVIATION MEETING."—On Saturday, September 19—the Saturday after the Schneider Trophy Contest—the ladies of the Northamptonshire Aero Club are arranging an All-Women's Aviation Meeting at Sywell Aerodrome.

This will be the first meeting at which all the flying will be done by women pilots, and the organisers are anxious to make it a great success. An ambitious programme is in course of construction, and all pilots—both men and women—will be warmly welcomed.

BROOKLANDS.—The Annual Meeting at Clacton, organised by the Brooklands School of Flying, took place on Wednesday of last week and was an unqualified success, about 6,000 people paying gate-money.

During the week 70 hr. were flown at Brooklands and two pupils made their first solo flights. Four new pupils were added to the School, and the final tests in the *Tattler* competition were decided. The semi-finalists were Mr. Dent, Miss Radcliffe, Mr. Handasyde, Miss Dawkins and Mr. Holbeach. The winner, who qualifies for a full course of instruction, was Mr. Handasyde, a son of the designer of the Martin-Handasyde machine.

The new club building is growing rapidly, and is now 12 ft. high.

NEWCASTLE AIR PAGEANT.—The Pageant, which is being held at Cramlington by the Newcastle Aero Club on Saturday, August 22, will be on a larger scale than the Pageant in 1929. This year the Royal Air Force will be represented by machines from No. 23 Sqdn., which is stationed at Kenley, equipped with "Gamecocks," and also from No. 26 Sqdn., equipped with "Atlas" aircraft.

A demonstration will be given illustrating the use of short-wave wireless telephony between troops and aircraft. The public will be able to hear on the loud speakers the orders passed from the ground station to the aircraft flying above the aerodrome, and will see them carry out the various manoeuvres as instructed by the ground station.

Joy-riding will be catered for, and Captain Fielden, of Aviation Tours, Ltd., will have several machines available on the aerodrome.

Entry forms for the Grosvenor Cup Race, which will be held at this meeting, can be obtained from the Secretary, Cramlington Aerodrome.

In the evening there will be a dinner and dance at "Tilleys," to which all visiting pilots are invited.

The Newcastle Club is informed by the Royal Aero Club that, at a meeting of their Racing Committee on July 29, 1931, the decision of the Newcastle Aero Club regarding the disqualification of the first aircraft which arrived at Newcastle in the London-Newcastle Air Race on May 30 is upheld, and the prizes are therefore awarded as follow:—

First prize, Capt. D. I. M. Kennard (Klemm monoplane); second prize, Capt. E. W. Percival (Hendy 302); third prize, Miss W. S. Brown (Avro Avian). Capt. E. W. Percival also wins the prize for the fastest time.

WEEK-END MEETINGS.—During the week-end there were two meetings held on opposite sides of the country. The first was at Cardiff, where a gathering of some dozen aircraft attended. The meeting was opened by the Lord Mayor of Cardiff (Ald. R. G. Snook, J.P.), and there were several events, such as races, arranged for the visiting aircraft.

Wenvoe Aerodrome, which is being run by the Cardiff Flying Club, is not a very large aerodrome, but it is capable of improvement, and should prove very useful for those flying down to the borders of Wales.

The second meeting was that held at the Ipswich Municipal Aerodrome by the Suffolk and Eastern Counties Aeroplane Club. The chief event was a race in which seven aircraft took part. This was won by F./O. J. W. Gillan in his Bluebird (Gipsy I) at 102 m.p.h.; Mr. A. C. Johnstone was second in his Avian (Cirrus III), and Miss Joan Page third in her Redwing (Genet).



THE MOTH TRAINER: A side view of this machine, which was described in our issue for July 3 last. By taking the exhaust pipe down in front, the port side of the fuselage is left unencumbered, and it is possible for the occupants to get in and out on either side. (FLIGHT Photo.)

GLIDING

THE PORTSMOUTH AND SOUTHSEA GLIDING CLUB are, in conjunction with Lyons Tea, Ltd., holding a Gliding and Soaring Demonstration at Portsdown Hill on August 29 and 30.

No entrance fees or any contributions are asked for. A hearty welcome is extended to all clubs, and plenty of accommodation is available for machines.

Portsdown is a splendid soaring site, Herr Kronfeld having remained up at will, and respectable performances have been put up on primary machines, including one of over 8 min.

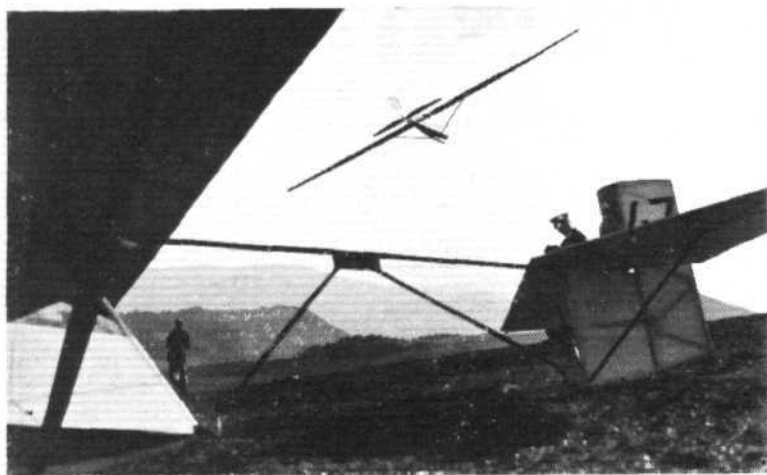
A number of manufacturers have signified their intentions of being present with their machines. Several prominent airmen and airwomen will give exhibitions. Mr. Lowe-Wylde is bringing his B.A.C. Two-Seater Glider.

On Saturday there will be a Duration Contest for a trophy presented by the Deputy Lord Mayor (Councillor J. E. Smith), open to members of the Portsmouth Club only.

On Sunday there will be a Spot Landing Competition for

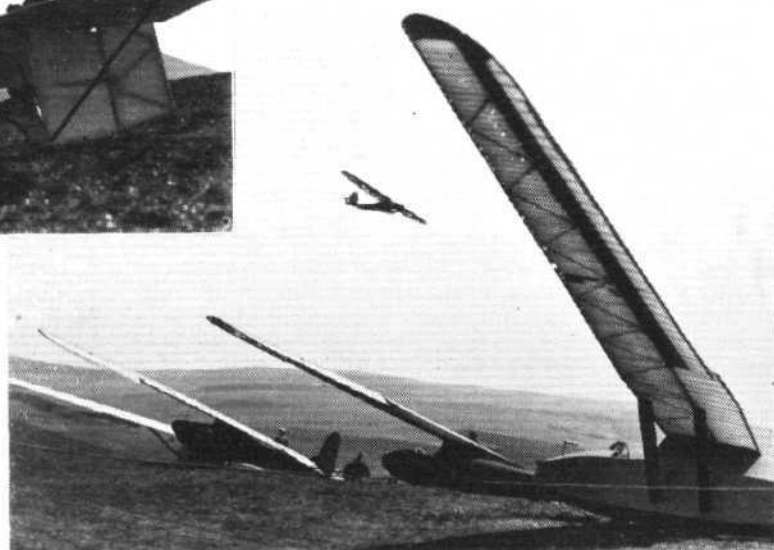
members, for which a trophy has been presented by the *Portsmouth Evening News*; a Distance Flight open to all pilots on primary gliders; a Duration Contest open to all pilots on primary gliders, and also a Spot Landing Contest open to all pilots on primary gliders; and finally a Soaring Contest open to all pilots on gliders other than primary. There will also be aerobatics and a parachute descent.

GLIDING IN CZECHOSLOVAKIA.—The Masaryk Air League, the association formed some years ago for the encouragement of civil aviation in Czechoslovakia, and which has branches in every part of the Republic, has arranged for a course in gliding to be given from July 29 to August 30, at Hostyn, in Moravia. This is the first public course of the kind held in Czechoslovakia. The cost of the course is Kc. 1,200 (about £7 10s.), but the local branches of the Masaryk League are paying the fees for suitable candidates from their own districts. The arrangements for the course are in the hands of the Olomouc Branch of the Masaryk Air League.



On the right is another unusual photo of a high efficiency glider taken from under the wings of a row of similar machines.

Below, the "Erich Offermann" is seen in the valley below the control point from which all measurements for the competitions are taken.



AT THE WASSERKUPPE: On the left Herr Wolf Hirth, recently returned from America, is making a fairly sharp turn on the Grunau and is seen over the open girder tail of a practice glider during the competitions now being held by the Rhon-Rossitten Gesellschaft.



Correspondence

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

DESIGNER OF "BLUEBIRD" AND "LINCOCK"

[2760] I have been interested to read the article on the Arrow "Active" in the current issue of FLIGHT, and should like to join in congratulating Mr. Thornton and his associates on the production of such an interesting little machine.

There is, however, a statement in the article which I feel needs correcting—this is, that Mr. Thornton was responsible, under me, for the original design of the "Bluebird," and also, to some extent, for the Lynx-engined Blackburn "Lincock."

The original design of the "Bluebird" was actually the work of Mr. G. E. Petty, who not only produced the original layout, but was also responsible for the whole of the aerodynamic design and the structural scheme and main stressing. At this stage the job was handed over to Mr. Thornton for completion of detail design and installation work. Mr. Thornton was then attached to the "Bluebird," and attended various flying meetings, and, together with the late Flight Lieut. Longton, did a great deal in developing the machine, and, while no one would wish to minimise the importance of the detail and development work, I feel that it would be distinctly unfair to Mr. Petty to let the statement remain just as it appears.

I think the reference to the "Lincock" must be an error on your part, as this machine was, from start to finish, the work of Mr. Petty.

My object in writing is not in any way to detract from the valuable work which Mr. Thornton did with this company, but merely to state the correct position as a matter of fairness to Mr. Petty.

F. A. BUMPUS,
Director and Chief Engineer.

The Blackburn Aeroplane & Motor Co., Ltd., Brough.
July 28, 1931.

[We are very glad to have the statement of Major Bumpus on the actual facts concerning the original design of the "Bluebird" and "Lincock" machines. The error is one for which we must take the entire blame, as Mr. Thornton did not, in his letter which accompanied the material upon which the article on the Arrow "Active" was based, make any reference whatever to his previous connection with the Blackburn Company. We were under the impression that, as stated in the article, Mr. Thornton designed the two Blackburn machines mentioned, but evidently even the editorial memory is not infallible, and the letter from Major Bumpus should make the position quite clear and give credit where credit is due.—ED.]

BLIND FLYING

[2761] On page 686 of your issue of July 17, you describe some blind flying tests at Wittering.

I have recently been undergoing a course at Air Service Training, Ltd., at Hamble, and would like to call your attention to another blind flying feat, which was made by one of the instructors there. He took off from Hamble under the hood, and only removed this on arrival at Heston. An observer was carried, merely to avoid the risk of collision, and I believe he gave no instructions and did not touch the controls during the whole journey.

One of the standard features of the blind flying course at Air Service Training is taking off under a hood, getting into and recovering from a spin, and recovering from awkward positions by instruments only.

Glasgow. G. C. WALKER.
July 25, 1931.

MORE FINANCIAL WHOOPEE

[2762] I recently became the proud possessor of an aeroplane having an over-all area greater than 900 square feet.

According to a Notice to Airmen issued by the Air Ministry, aircraft over 900 square feet must pay 5s. for each landing they make on a civil aerodrome. Aircraft having a smaller over-all area may land for 2s. 6d. There are, however, two exceptions to this rule—aeroplanes of the expensive luxury type. These are only charged 2s. 6d.

Upon inquiry at the Air Ministry, I was informed that the manufacturers of these aeroplanes had come to a special agreement with the Air Ministry whereby the Notice to Airmen need not apply in their case. A most courteous gentleman at the Air Ministry informed me that

he was aware of this anomaly, and that a revision of the existing Notice to Airmen was being contemplated, which would remove this anomaly, and, as soon as those in charge of the finance department could be persuaded to make up their minds, the charges would be more narrowly graduated on a weight basis. It seems, however, that those in charge of the finance have been deliberating the matter for a full year.

May I beg some more space to point out to them that both types of aeroplane for which they have made the exception may only be described as "luxury productions"? It seems, therefore, that, on the one hand, they are subsidising instruction and on the other hand putting a premium on the higher-priced aircraft. Why bother to help people to learn to fly and then make it cheaper for the wealthier pilot to operate his machine?

London, E.C.2.

JOHN G. CRAMMOND.

July 29, 1931.

AIR SCOUTS' ASSOCIATION

[2763] I would like to bring to the notice of readers of your most valuable paper the following movement, namely, "The Air Scouts' Association."

This Association comprises a number of keen, energetic, air-minded young men who have set out on a rather big undertaking, and, even against the many disadvantages which they are meeting, still keep going ahead. Their idea is to help the young men of this country between the ages of 14 and 21 to obtain some knowledge of aviation, which may help them to become pilots of the future. The fee charged for this is £1 per annum. Squadrons of Air Scouts are being formed, and men experienced in aviation in general have come forward and willingly offered their help by giving these scouts lectures regarding the construction and flying of aircraft.

The Association is endeavouring to supply each squadron with an auto-tow glider, by which it is hoped to give them a good grounding on flying by teaching them gliding first.

Next year they propose to open a flying school with power-driven aircraft, should the necessary capital be found, where advanced scouts will be taught to fly, and also be given advanced instruction in ground engineering, etc.

I would like to point out the value of this movement; prominent airmen have from time to time toured the country giving flights to the young, which has undoubtedly made them air-minded, but what is the use of that if they are not going to be able to fly again, owing to the enormous cost of training and hiring of aircraft?

Surely this movement is worthy of support from those who realise its value, and are eager for the younger generation to have its chance of flying.

Those interested and wishing to support this movement can do so by writing to Mr. A. R. Marshall, 59, Woodlands Road, Middlesbrough, Hon. Secretary, who will give them the necessary information.

Trusting you will give this movement publicity.

Billingham-on-Tees,

W. DAVISON.

July 24, 1931.

A REAL "MISSING" ENGINE

[2764] Your Croydon correspondent referred in this week's issue to an incident which occurred to a Sabena Fokker F.VIIb-3m, when one of its engines dropped out, and he imagines that there must be some weakness in the structure.

We are glad to be able to inform you that the cause of this mishap is not to be found in the structure of the machine, as the engine dropped out because the propeller broke off. Messrs. Sabca (Société Anonyme Belge de Constructions Aéronautiques), who built this machine under licence, inform us "que la rupture du berceau-moteur droit a été causée par la rupture du moyeu d'hélice qui a cassé à niveau de la gorge de dégagement se trouvant au sommet du talon inférieur de la pale."

The fact that the pilot was able to continue his flight to Brussels with two engines only is, on the other hand, one more proof of the reliability of our three-engined machines.

B. STEPHAN.

N.V. Nederlandsche Vliegtuigenfabriek.

Amsterdam, C.

August 1, 1931.

AIRPORT NEWS

CROYDON

THE "gold rush" of the previous week was continued again for the first half of the week now under review, and many more machines left loaded to capacity. Tuesday night saw the end of this, much to everyone's relief. To the casual observer watching machines leave one after the other it presents just an interesting spectacle, but one doubts whether they realise the work they entail, and the fever heat everyone has to work at. This aviation business is really a most nerve-racking affair, particularly so when these special affairs take place. With just the normal services it is bad enough, but with dozens of extra machines to cope with it becomes a nightmare, and the various staffs are thankful when their relief time arrives.

The Atlantic flyers, Pangborn and Herndon, arrived here early on Thursday morning, and stayed for about six hours, during which time they partook of breakfast and snatched a couple of hours' sleep before leaving again for Berlin.

On the Wednesday evening the other two, who were making for Constantinople, passed over the aerodrome at about 7.15 p.m., going strong.

The Atlantic now seems as simple to cross as the Channel, although, candidly, one fails to see the objects of these flights. To say the least, they are foolhardy, and one

cannot see what benefit they are to aviation in general. However, probably my ideas are old-fashioned.

Imperial Airways have taken delivery of "Hunno," the third H.P. 42. He was immediately placed on service, and has now made several trips.

The holiday traffic has been very heavy, and some services have been run in triplicate and quadruplicate. The Air Union cheap week-end ticket has again proved very popular, and one can realise the attraction. Six guineas return compares very favourably with railway fares, and, coupled with the regularity of this service, it is bound to attract.

On Saturday, two Japanese, Messrs. Kurimura and Kumakawa, arrived here after flying from Tokyo in stages. Their machine was of Japanese construction, closely resembling many of our own light aircraft, and it certainly looked a thoroughly businesslike little job. They were met here by several Japanese Embassy officials. After Customs formalities were completed, they flew across to Hanworth in company with two N.F.S. machines, at which place they were given an official welcome by the Japanese Colony in London.

The traffic figures for the week were:—Passengers, 2,451; freight, 210 tons.

P. B.

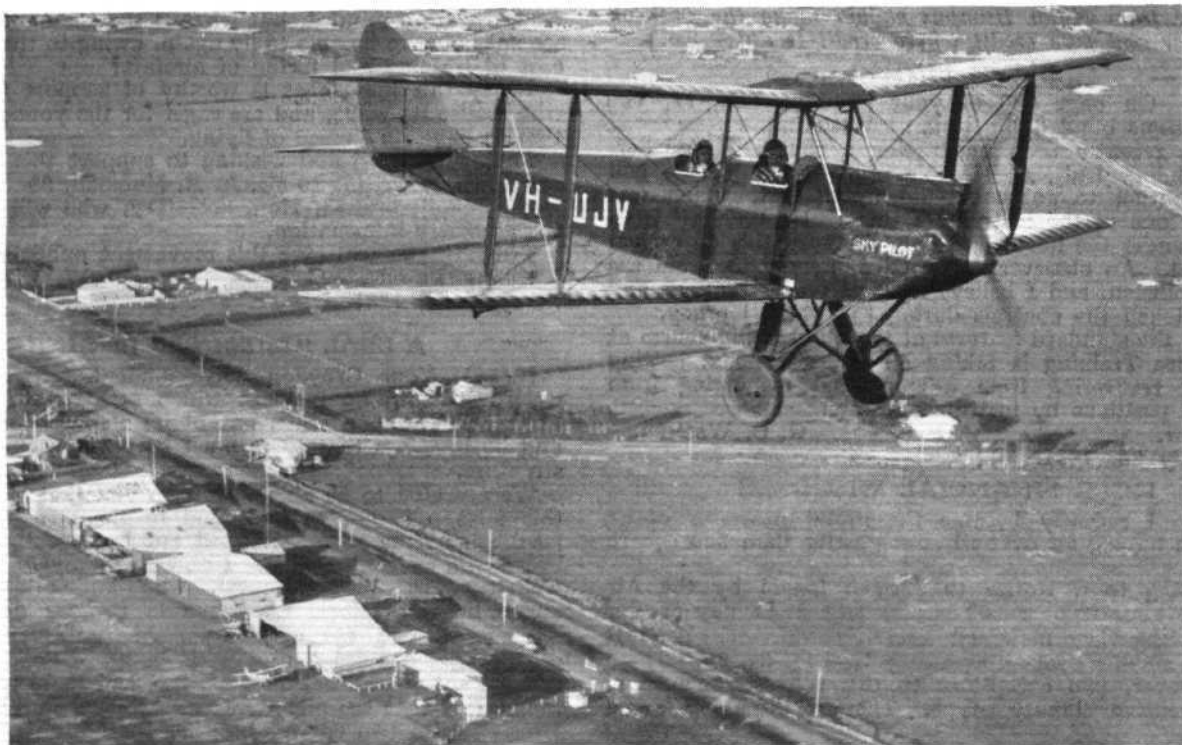
The Irvin Air Chute in Greece

DURING a test flight on June 19, 1931, at Tatoi Aerodrome, near Athens, Greece, by Lt. Commander George Falconakis and Mechanic Peter Yannopoulos, on a reconnaissance aircraft, the right aileron broke away, and the machine became out of control after an aerobatic performance at 4,000 ft. According to the pilot's impressions, the machine dived at a speed between 150 and 180 knots. Both airmen escaped with their Irvin air chutes. An investigating committee reported that the accident was due to aerobatics being performed at too great a speed, which resulted in abnormal strains. The Greek Air Services were very much impressed by the excellent functioning of the parachutes, which was the first time they had been sub-

jected to such a test in Greece, and under the most severe conditions. Greek naval flyers are equipped with Irvin air chutes.

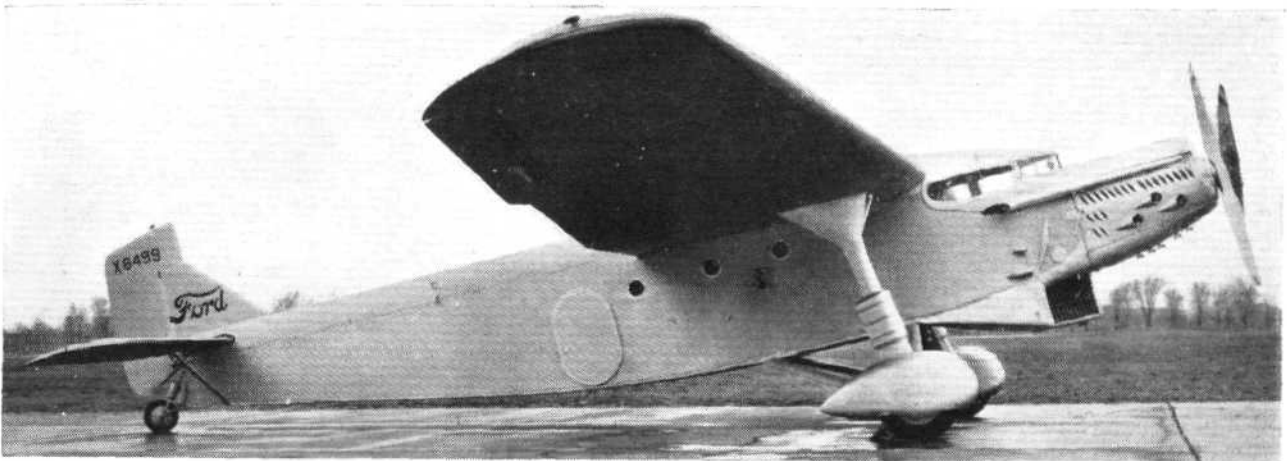
A Fokker Strikes a Mast

ONE of the K.L.M. Fokker monoplanes was wrecked on August 4 by striking the mast of a vessel. The machine had started from Waalhaven with 15 people on board. Engine trouble developed, and the pilot decided to turn back. It was then that the left wing struck the mast. The pilot succeeded in making a landing in a field, but the machine was badly damaged, and pilot and two of the passengers were slightly injured. A child playing in the field was, unfortunately, rather severely injured.



THE SKY PILOT: A "Gipsy Moth," *Sky Pilot*, which has been put into use in mission work on the Roper River, Northern Australia, by the Rev. K. Langford Smith (in rear cockpit). The photo was taken from a Shell "Moth" after taking off from Essendon for its new field of operations.

AIR TRANSPORT



THE FORD 8-A

A Freight Carrier with 650-H.P. Hispano Engine

GENERALLY similar to previous Ford monoplanes, and, in fact, having the same wing, fuselage, and tail structure as the type 5-AT, the Ford 8-A freight carrier is aerodynamically superior in that it has a lower minimum drag as a result of the removal of the outboard engines. The consequence is that, when carrying even a quite heavy load of freight, the machine cruises at the very useful speed of 110 m.p.h., at which cruising speed it has a range (in still air) of 500 miles, and carries a pay load of 3,500 lb., or 5.38 lb./h.p.

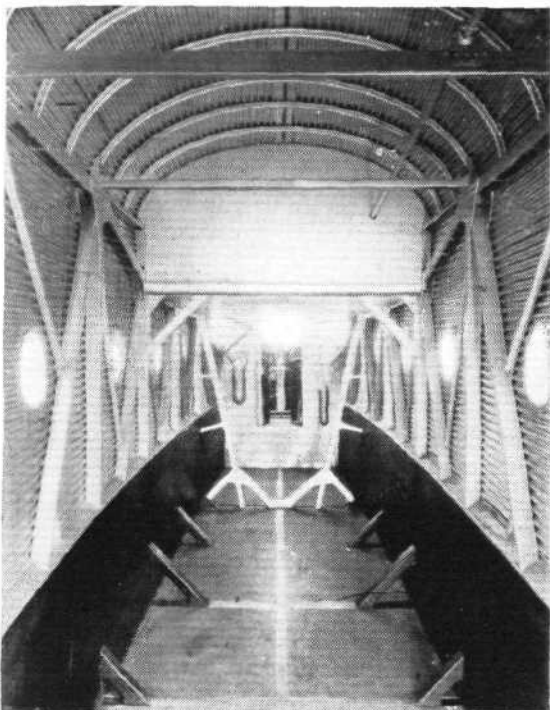
The main data relating to the Ford 8-A freight carrier are as follow:—

Length o.a.	..	..	50 ft. 3 in. (15.3 m.)
Wing span	..	..	77 ft. 10 in. (23.7 m.)
Height	..	..	12 ft. 0 in. (3.66 m.)
Wheel track	..	..	18 ft. 7 in. (5.66 m.)
Tare weight	..	..	6,100 lb. (2 772 kg.)
Gross weight	..	..	11,000 lb. (5 000 kg.)
Disposable load	..	..	4,900 lb. (2 228 kg.)
Cabin volume	..	..	529 cu. ft. (15 m. ³)
Wing loading	..	..	13.18 lb./sq. ft. (64.4 kg./m. ²)
Power loading	..	..	16.9 lb./h.p. (7.7 kg./h.p.)
Pay load (500 miles range)	..	..	5.38 lb./h.p. (2.45 kg./h.p.)
Maximum speed	..	..	135 m.p.h. (217 km./h.)
Cruising speed	..	..	110 m.p.h. (177 km./h.)
Initial rate of climb	..	..	700 ft./min. (3.56 m./sec.)
Ceiling	..	..	15,000 ft. (4 580 m.)

Everling "High-Speed Figure," 21.53.

The fact that the type 8-A has wing, fuselage, and tail identical with those of the three-engined type 5-AT enables operating companies who already own the earlier model to change over, should freight traffic at any time become greater than passenger traffic, to the new freight carrier with relatively small trouble and expense. The space in the fuselage available for freight is large, 18 ft. 9 in. long, 6 ft. high, and with an average width of 4 ft., giving a total freight "hold" volume of 529 cu. ft. Thus, even quite bulky freight can be carried.

Apart from its use as a carrier of general cargo, the Ford 8-A can, of course, have its fuselage space adapted for the carrying of any special cargo. The photograph of the cabin shows how relatively free of obstruction the space is.





THE NEW FORD FREIGHTER: The type 8-A is a single-engined version of earlier Ford types. The engine is a 650 h.p. Hispano-Suiza, with which the tare weight is 6,100 lb. and the permissible gross weight 11,000 lb. Out of the disposable load of 4,900 lb., the pay load may be 3,500 lb., when the range is 500 miles.

As standard power unit, the 650-h.p. Hispano-Suiza engine has been chosen. This has been found to give excellent results, but, should any operating concern desire to fit any other power plant of approximately the same power, there is no difficulty in doing so.

The accompanying photographs show the Ford 8-A to be a very "clean" machine, the undercarriage strut attachments to the wing being faired and the wheels being provided with "spats." This appearance of clean lines is substantiated when one comes to examine the performance in relation to weight, power, and wing area. The value of the Everling "High-speed Figure," which represents propeller efficiency divided by drag coefficient, is no less than 21.53, which is above the average value. If a

propeller efficiency of 75 per cent. at maximum speed is assumed, the minimum drag coefficient of the 8-A in British "absolute" units becomes 0.0174 for the complete machine.

If the Ford 8-A is efficient aerodynamically, it is equally so regarded as a piece of structural engineering. The ratio of gross weight to tare weight is 1.803, which means that the machine carries as disposable load 80.3 per cent. of its tare weight, a figure well above the average value. The disposable load can, of course, be apportioned in any desired ratio, but the standard machine carries, as already mentioned, fuel for a range of 500 miles, which leaves a pay load of 3,500 lb. At the normal rated engine power this represents 5.38 lb./h.p.

Air Mail to Cape Town

THE final arrangements for the opening of the southern half of the African air mail route are now under completion, and the route should be working in December. The line at present ends at Mwanza, but later it will be diverted from the Great Lakes at Kisumu, and, after touching Nairobi, will be carried south to Tanganyika and Cape Town, a distance of 2,960 miles, which will be flown in four daily stages of from 640-825 miles. The service is to be operated at the start by a weekly one running on a schedule to begin with of 11 days, but this, it is hoped, will later be reduced to 9. The various stages from the lakes southwards will be Nairobi, Moshi, Dodoma, Mbeya, each of 640 miles; Mpika, Broken Hill, Salisbury, each of 825 miles; Bulawayo, Pietersburg, Johannesburg, each of 690 miles; Kimberley, Victoria West and Capetown, each of 825 miles. The Hercules 14-seaters will be withdrawn from the eastern section of the India route for service on this new part of the Cape-town route south of the lakes, and will be replaced in India by the new H.P. 42 class. The Hercules, which has already done good service in tropical climates, will be relied upon for this South African route until such time as the new Armstrong-Siddeley monoplanes are ready. It is expected that the equipment of the route will be completed some time in November, and that after some trial flights the full service should be in operation in December.

A Daily Deauville Service

On July 25 last the Air Union inaugurated a new daily "luxury" air service between London and Deauville. "Golden Ray" liners leave Croydon at 9 a.m., and, after calling at Abbeville for Customs, land at Deauville at 11.45 a.m. In the reverse direction, machines leave Deauville at 9.30 a.m., and arrive at Croydon at 12.15 p.m. The fares are £5 15s. single and £10 return (or to Abbeville, £4 4s. and £6 6s. respectively).

London to Belfast Air Service

It is learned in Belfast that a special passenger service between London and Belfast is being organised for the Tourist Trophy Motor Races, which take place on the

Ards circuit, near Belfast, on August 22. On the outward and return journeys calls will be made at Liverpool.

Air Mail Traffic

DURING the quarter ended June 30, 1931, 27,996 lb. of letter air mail were carried from this country, as compared with 20,634 during the corresponding quarter of 1930, an increase of 36 per cent. The carryings to India were again larger than those to any other country, viz., 7,860 lb., as compared with 6,740 in the June quarter of 1930, an increase of 17 per cent. The traffic to various destinations was as follows:—

	June Quarter, 1930.	June Quarter, 1931.
	lb.	lb.
Indian Air Service (including Egypt, Iraq, Palestine, etc.)	10,196	11,434
Iraq (air from Gaza)	200	No service
Australian Internal Service	1,152	1,089
Australia (two experimental flights) ..	—	567
South African Internal Service	1,269	2,361
Central African Service	—	1,182
Other Extra-European Destinations ..	1,193	1,845
Total Extra-European Services	14,010	18,478
Continental Air Services	6,624	9,518
Grand total	20,634	27,996

The traffic for European countries continues to grow, and showed an increase of 44 per cent., as compared with the June quarter of 1930. There was a slight decrease in the amount of parcels carried by air to European destinations, the figures being 40,327 lb. in the June quarter, 1931, as against 43,200 in the corresponding quarter of 1930.

THE ROYAL AIR FORCE

London Gazette, July 28, 1931.

General Duties Branch

The following are granted short-service commns. as Pilot Officers on probation, with effect from and with seniority of the dates stated:—G. L. Menzies; July 11. Flying Officer D. W. Reid, R.A.F.O. (S.R.); July 13. The following Pilot Officers are promoted to the rank of Flying Officer:—F. F. Wicks; June 14. A. R. T. Coke, L. E. Dalrymple, E. Elgey, E. M. Gurney, L. W. V. Jennens, R. P. J. Leborgne, W. C. Pitts, G. R. White, R. B. Whittingham, A. R. Wilson; June 27. J. K. Brew; July 4. Group Captain A. C. Winter, O.B.E., is restored to full pay from half pay; July 27. Air Commodore the Hon. J. D. Boyle, C.B.E., D.S.O., is placed on half-pay list, scale A; July 28. Lieut. P. Somerville, R.N., Flying Officer, R.A.F., relinquishes his temp. commn. on return to Naval duty; July 14.

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

Sir Archibald Philip Hope, Bt., is granted a commn. in Class AA (ii.) as Pilot Officer on probation; July 13. R. H. B. Grattan is granted a commn.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Group Captain W. C. Hicks, to Air Ministry (Dept. of A.M.S.R.), on appointment as Director of Airship Development; 1.7.31.

Flight Lieutenants: F. C. B. Savile, to No. 204 Sqdn., Mount Batten; 7.7.31. F. G. Gibbons, D.F.C., to No. 204 Sqdn., Mount Batten; 7.7.31. R. N. Waite, to No. 201 Sqdn., Calshot; 4.7.31. J. F. Titmas, to No. 36 Sqdn., Singapore; 15.6.31. C. Rapley, to Marine Aircraft Experimental Estab., Felixstowe; 21.7.31. C. McC. Vincent, D.F.C., to Experimental Section, Royal Aircraft Estab., S. Farnborough; 1.7.31. H. M. S. Wright, to Experimental Section, Royal Aircraft Estab., S. Farnborough; 25.6.31. C. H. Brill, P. J. A. Hume-Wright, W. F. Lovering, all to R.A.F. Base, Calshot; 6.7.31.

Flying Officers: B. A. Blythe, to No. 201 Sqdn., Calshot; 4.7.31. P. C. Fair, to Coast Defence Co-operation Flight, Eastchurch; 3.7.31. W. D. J. Michie, to Home Aircraft Depot, Henlow; 29.6.31. C. V. Howes, to Home Aircraft Depot, Henlow; 29.6.31. J. D. Baker-Carr, L. R. Mouatt, both to R.A.F. Base, Calshot; 6.7.31.

Pilot Officers: R. F. Smith, to No. 2 Sqdn., Manston; 20.7.31. G. G. Sharp-Bolster, to R.A.F. Depot, Uxbridge; 6.7.31. B. W. E. R. Bonsey, to R.A.F. Depot, Uxbridge; 1.7.31. G. L. Menzies, to No. 2 Flying Training Sch., Digby, on appointment to a short-service commn.; 11.7.31. D. W. Reid, to No. 99 Sqdn., Upper Heyford, on appointment to a short-service commn.; 13.7.31. M. H. Kelly, W. Halmshaw, T. J. MacDermott, I. G. Ross, W. F. Hilchie, all to R.A.F. Base, Calshot; 6.7.31. T. Q. Horner,

in Special Reserve as Pilot Officer on probation; July 8. Flying Officer J. G. Hay is transferred from Class C to Class A; July 29. Flying Officer W. R. Baily is transferred from Class C to Class AA (i.); June 1. Flying Officer W. L. Witlock is transferred from Class A to Class C; July 4.

The following Flight Lieutenants relinquish their commns. on completion of service:—L. G. Paget, A.F.C.; Dec. 5, 1930. F. J. Powell, M.C.; June 5. The following Flying Officers relinquish their commns. on completion of service: H. J. T. Saint, D.S.C.; Feb. 1. M. J. Berlyn; April 19. F. A. Ledger; May 29. F. G. Wayman; June 1. J. H. Simpson; June 14. Flying Officer D. W. Reid relinquishes his commn. in Special Reserve on appointment to a short-service commn. in R.A.F.; July 13.

AUXILIARY AIR FORCE

General Duties Branch

No. 602 (CITY OF GLASGOW) (BOMBER) SQUADRON:—D. W. Law to be Pilot Officer; July 6.

Medical Branch

No. 604 (COUNTY OF MIDDLESEX) (BOMBER) SQUADRON:—A. T. G. Thomas, M.B., B.S., to be Flying Officer; July 7.

Stores Branch

Flying Officer T. I. Iliff, to H.Q., R.A.F., Middle East, Cairo; 4.7.31.

Accountant Branch

Pilot Officers: W. M. Lyons, to Station H.Q., Tangmere; 21.7.31. F. C. Hayward, to Station H.Q., Northolt; 21.7.31. T. E. Horsfield, to Station H.Q., Andover; 21.7.31. L. Hornabrook, to R.A.F. Base, Gosport; 21.7.31. E. Bowman, to Home Aircraft Depot, Henlow; 21.7.31.

Medical Branch

Squadron Leader A. J. Brown, D.S.O., to H.Q., Air Defence of Great Britain, Uxbridge; 31.7.31.

Flight Lieutenant P. B. L. Potter, to Princess Mary's R.A.F. Hospital, Halton; 28.7.31.

Flying Officer E. A. Gudgeon, to Station H.Q., Boscombe Down; 4.8.31.

R.Ae.S. AND INST.Ae.E.

Official Notice

Wilbur Wright Memorial Lecture

The Wilbur Wright Memorial Lecture will be delivered by Mr. Glenn L. Martin, on Wednesday, September 16, 1931, at 9.15 p.m. in the Science Museum, South Kensington. The title of the lecture is "The Development of Aircraft Manufacturing."

On the evening of the delivery of the lecture, the Society will hold a Conversazione in the Aeronautical Section of the Science Museum, by kind permission of Colonel Sir Henry Lyons. This date has been selected because at that time most of the foreign notabilities in the aeronautical world will be in England for the Schneider Trophy Contest, and will be specially invited to attend the Conversazione, at which most of the leaders in British aviation will also be present.

The programme for the evening is as follows:—

- 8.30-9 p.m. Reception by the President, Mr. C. R. Fairey, M.B.E., F.R.Ae.S., and the Council.
- 9.15-10 p.m. Delivery of the Wilbur Wright Memorial Lecture by Mr. Glenn Martin.
- 10 p.m.-midnight. Conversazione.

By kind permission of the Air Council the Band of H.M. Royal Air Force will play from 8.30-9 p.m. and 10 p.m.-11.45 p.m.

A distinguished company will be present and it is hoped that there will be a large attendance of members and their guests. Admission will be by ticket only, and applications may be received from non-members. Ladies are specially invited to be present. Evening dress with orders and decorations will be worn.

Tickets (including buffet) are 5s. each, and early application is advised as it may not be possible to accommodate late comers.

Lecture Programme, 67th Session

The Lecture Programme of the 67th Session of the Royal Aeronautical Society has been provisionally arranged as follows:—

- Wednesday, September 16.—The Wilbur Wright Memorial Lecture, Mr. Glenn Martin.
- Thursday, October 8.—Prof. Piccard on his experiences in his famous balloon ascent.
- Thursday, October 15.—Mr. H. Sutton, M.Sc., A.F.R.Ae.S., "The Protection of Metals in Aircraft Construction."
- Thursday, October 29.—Captain A. G. Lamplugh, F.R.Ae.S., M.I.Ae.E., "Accidents in Civil Aviation."
- Thursday, November 5.—Mr. H. B. Irving, B.Sc., A.F.R.Ae.S., and Mr. A. V. Stephens, "Safety in Spinning."
- Thursday, November 19.—Mr. H. Constant, "Aircraft Vibration."
- Thursday, December 3.—Mr. S. Scott Hall, M.Sc., D.I.C., A.F.R.Ae.S., "Wheel Brakes and Undercarriages."

Thursday, December 10.—Mr. W. S. Farren, M.B.E., F.R.Ae.S., M.I.Ae.E., "Air Flow—Demonstrations on the Screen by means of Smoke."

Thursday, December 17.—Dr. G. V. Lachmann, A.F.R.Ae.S., "Control beyond the Stall."

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Thursday, January 14.—Mr. E. Ower, F.R.Ae.S., "Interference."

Thursday, January 28.—Mr. A. E. Woodward-Nutt, B.A., A.F.R.Ae.S., and Flt. Lt. A. F. C. Scroggs, "The Effect of Height on Range."

Thursday, March 10.—Mr. E. F. Relf, F.R.Ae.S., "Results with the new Wind Tunnel at the N.P.L."

A number of other lectures are being arranged, and all particulars will be published as soon as dates are fixed.

J. LAURENCE PRITCHARD,
Secretary.

HALTON SCHOOL FOR APPRENTICES

Wing Commander H. S. Powell, M.C., on the completion of the senior officers' war course at the Royal Naval College, Greenwich, has been selected for administrative duties with No. 4 Apprentices' Wing at Halton, in succession to Wing Commander J. H. Herring, D.S.O., M.C. Wing Commander Powell transferred to the R.F.C. in 1915 from the Ceylon Planters' Rifle Corps.

R.A.F. SPORT

CRICKET.

R.A.F. v. R.N.—A two days' match between the R.A.F. and the R.N. was played at Halton on August 3 and 4. The R.A.F. batted first and made a very good start and hit up a total of 279. The highest score was 78 by Flt. Lt. A. J. Holmes. Then the Air Force captured five of the Navy's wickets for 25, and thinks looked well for them. At that point Lt. Comdr. E. L. D. Bartley and Major R. A. D. Brooks made a stand. Bartley scored 153 not out and Brooks 52. The Navy declared at 312 for 9. The Air Force made 202 in their second innings (Holmes 65) leaving the Navy 170 to win in an hour and 40 minutes. This was accomplished just in time for the loss of 5 wickets.

R.A.F. v. Free Foresters.—On July 27 and 28 the R.A.F. beat the Free Foresters at Camberley by four wickets, just five minutes from time. The Free Foresters scored 175 and 186; and the Air Force got 210 and 152 for six wickets.

THE ROYAL AIR FORCE MEMORIAL FUND

The usual meeting of the Grants Sub-Committee of the Fund was held at Idlesleigh House, on July 23. Mr. W. S. Field was in the chair, and the other members of the committee present were: Mrs. L. M. K. Pratt Barlow, Squadron Leader A. H. Wann. The committee considered in all 17 cases, and made grants to the amount of £446 3s.

AIR POST STAMPS

By DOUGLAS ARMSTRONG

From New Guinea

ALTHOUGH for three years or more an air service has been in operation between the coast settlements and the goldfields of New Guinea, a Government contract for the transportation of mails has only lately been concluded. Both letters and parcels are now carried, the contractors receiving a proportion of the postage paid. To facilitate accounting, distinctive stamps have now been provided in the form of contemporary postage types, with the addition of an aeroplane device in the top right-hand and the inscription "AIR MAIL" obliquely in the lower left-hand corner, overprinted in black. Thirteen denominations, ranging from $\frac{1}{2}$ d. to £1, are comprised in this newest addition to the Empire's air stamps.

It may be recalled that some time in 1928 a typewritten imprint "By Air" was applied (unofficially) to certain postage stamps of the territory, affixed to letters flown between Wau and Morobe by the aeroplane Junker J.34, such items being decidedly scarce.

Tirana-Rome First Flight Stamps

In accordance with precedent, the inaugural flight of the through air-mail service connecting the capitals of Albania and Italy, which took place on July 6, was signalled by the application of a souvenir imprint upon the current Albanian air-post stamps to the extent of 13,000 sets of the Qind values and 5,000 of each of the Franken denominations. The superscription, rather crudely applied in semi-circular form, reads "TIRANE-ROME—6 Korrik, 1931," and the stamps thus distinguished were available for the particular flight only.

"Graf Zeppelin's" Arctic Mail

No Zeppelin flight is complete without its souvenir mail, and the recent Arctic flight proved no exception to the rule. Thousands of letters accumulated at Friedrichshafen and Leningrad for transmission via the Polar regions, for which particular postage stamps were provided in addition to the ordinary flight cachets by both the German and Russian post offices. The former consisted of the three existing Zeppelin post stamps expressly overprinted "Polar Fahrt, 1931," in purple-brown type, but the Soviet government created four special stamps of striking design depicting the arrival of the giant airship with its escort the Russian ice-breaker "Malygin" in the Arctic seas, watched by a Polar bear perched upon an iceberg, and inscribed "RUSS—POLE du NORD" in denominations 30, 35 kopeks, 1 and 2 roubles. At the time of writing it is reported that the mail was successfully transferred to the "Malygin" off Hoche Island. Owing to the breakdown of the super-submarine "Nautilus" however, it was impossible to make the proposed rendezvous with the Wilkins' Expedition.

Air Post in Canada

The announcement that as from July 1st, 1931, the government air mail fee in Canada has been raised from 5 cents to 6 cents for a single and 10 cents for a double weight letter may possibly presage a change in the denomination of the permanent air mail stamp of the Dominion. Meanwhile it is reported that two more of the semi-official air post vignettes are obsolete through the suspension of the services formerly operated by Commercial Airways and the Cherry Red Air Line respectively.

Air Post Exhibitions

Collectors of air post stamps are finding frequent opportunities nowadays for exhibiting their treasures in friendly rivalry. Some of the best-known air post collections in the world have been entered for competition in the great international exhibition of modern Philately (Mophila) which opens at Hamburg on August 22 for one week. Mr. O. Nirenstein, of Vienna, will be the special air-post expert on the jury, and among the novel prizes offered in this section is a nine-hours' trip in the airship *Graf Zeppelin* to the exhibitor of the best collection of Zeppelin mail stamps and covers. The famous dirigible will also carry out a series of special mail flights during the exhibition. British exhibitors of air stamps and covers include Miss G. Collins (Persian Air Mails), Mr. R. E. R. Dalwick (Air Stamp Rarities), Mr. F. J. Field (collection of air post covers, *hors concours*), Mrs. Anson Cleverty (unused air post stamps), Mr. D. Macdonald (Esthonian air stamps specialised), and Miss W. Penn Gaskell (air post stamps and covers).

Next year we are promised two international exhibitions devoted entirely to air post collecting, at Strasburg from May 7 to 16, and at Danzig in the following July.

IN PARLIAMENT

Light Aeroplane Clubs and Accidents

MR. MONTAGUE, on July 21, in reply to Mr. Everard, said during the year ended July 20, 1931, there were no fatal accidents to pupils under instruction at light aeroplane clubs; during each of the two previous years there were two fatal accidents.

Municipal Aerodromes, Grants

MISS BONDFIELD (Minister of Labour), on July 23, in reply to Mr. Everard, said since June 1, 1929, grants-in-aid of the cost of laying out municipal aerodromes have been approved by the Unemployment Grants Committee in respect of schemes submitted by Bristol, Cardiff, Kingston-upon-Hull, Norwich, Plymouth, Portsmouth and Stoke-upon-Trent. The rates of grant vary according to circumstances. In addition, the question of a grant in respect of an extension of the Kingston-upon-Hull schemes is under consideration, and a grant in respect of a scheme submitted by Liverpool was not approved. In some schemes a time limit is inserted.

Air Mail Service to India

MR. ATTLIE, Postmaster-General, on July 27, in reply to Mr. Graham White, said the average weekly weight of parcels despatched to India since the service was inaugurated in May last is 47 lb.; in the reverse direction the weekly average is about the same.

NEW COMPANIES REGISTERED

EASTERN COUNTIES AEROPLANE CLUB, LTD., Municipal Aerodrome, Nacton Road, Ipswich.—Capital £1,500 in £1 shares. To provide and carry on a social club; to provide aviation accommodation for storage of aeroplanes, waterplanes and mechanically-propelled vehicles; to provide expert tuition for the training of air pilots, etc. Directors:—H. C. Baker, "Gainsboro," Ransome Road, Ipswich. J. Howie, "Blue Barns," Ardleigh, Essex. R. Wormell, Serpentine Walk, Colchester. H. Nevard, 46, Bergholt Road, Colchester. C. Tripp, Castle Hill, Ipswich. Dr. M. MacEwan, 33, Berners Street, Ipswich.

CARDIFF AEROPLANE CLUB, LTD.—Capital £2,000 in £1 shares. To encourage, develop and carry on the science of aeronautics and aviation in all its branches, and to establish and maintain the Cardiff Aeroplane Club. First directors:—W. R. Bailey, Llantunnam Hall, Newport, Mon., member at Lloyds. C. H. Keen, "Parc," Llanishen, Glam., engineer. L. F. Beynon, Merthyr House, Cardiff, colliery proprietor. J. H. P. Brain, The Old Brewery, Cardiff, brewer. S. K. Davies, 54, Rutland Gate, S.W.7, company director. G. B. Dawson, "Claremont," Malpas, Newport, Mon., timber importer. M. R. Edmondson, St. Hilary, Cowbridge, Glam., R.A.F., retired. W. T. Edwards, 114, Exchange, Cardiff, stock and share broker. F. W. Mathias, Bryn-Teg, Radyr, Glam., engineer. H. M. Ingledew, 4, Mount Stuart Square, Cardiff, solicitor. N. W. Nash, 52, City Road, Cardiff, motor engineer. O. C. Purnell, 5, Working Street, Cardiff, Capt., R.A.F., retired. W. J. S. Thomas, Whitechurch, near Cardiff, tin plate manufacturer. Secretary: A. S. Davies. Solicitors: Ingledew & Sons, 4, Mount Stuart Square, Cardiff.

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motors. The numbers in brackets are those under which the Specification will be printed and abridged, etc.)

APPLIED FOR IN 1930

Published August 6, 1931

747. COMPAGNIA NAZIONALE AERONAUTICA. Float structures for land planes, seaplanes and the like. (352,511.)
7,952. L. BREGUET. Devices for stabilising and controlling aircraft, provided with rotatable wings of the helicopter type. (352,521.)
11,447. F. MELCHER. Screw propellers with flexible blades. (352,507.)
13,130. V. MICKELSEN and F. E. REBBECK. Supercharging arrangements for four-stroke-cycle i.c. engines. (352,595.)
17,031. E. L. HOFFMAN. Parachute apparatus. (352,668.)
23,490. BOULTON & PAUL, LTD., and V. J. JOHNSTON. Means for stiffening hollow structural members for use in aircraft. (352,767.)
38,610. FIAT SOC. ANON. Carburetors for aircraft engines. (352,891.)

APPLIED FOR IN 1931

Published August 6, 1931

- 11,749. W. HELMORE. Fuel supply to i.c. engines. (352,550.)

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